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of the



Oklahoma State Medical Association.

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Oklahoma State Medical Association.

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THE PRESIDENT'S ADDRESS

BY D. A. MYERS, LAWTON, OKLAHOMA.

DELIVERED AT THE NINETEENTH ANNUAL MEETING MUSKOGEE, MAY 9TH, 1911.

Members of the Oklahoma State Medical Association: It is with great pleasure that I greet you.

We meet to-day on historic ground—but a few years ago the primitive Red man roamed the prairies and the forest of this, the Old Indian Territory—"Monarch of all he surveyed." Not so long and a few of the inevitable pioneers—the white man—have in sight. Harrassed on every side, amid the perils and the hardships of frontier life, these sturdy pioneers proceeded to lay the foundation for their homes and a new commonwealth. To know how well they builded, we need only to gaze out on the beautiful city, whose doors are opened wide to us to-day. The day of the war whoop and the swish of the tomahawk are over—the scalping knife has been replaced by the scalpel knife, and the tomahawk by the hatchet of the sturdy laborer. All these scenes are passed into history, yet they made possible the splendid civilization that now inhabits this wonderful new State. Among the pioneers there were doctors—perhaps not the brightest, nor the most learned ones of the profession—and yet they filled a crying need and were as essential as any of the body politic. Crude though these doctors may have been in their methods and their technique, yet they were no more crude than their environments. As the trend of civilization came and passed over the border of this great commonwealth, and spread, and grew, so did the medical profession grow and expand until today there is not a State in the Union that

can boast of more big, brainy, self-reliant doctors than the State of Oklahoma. "The world moves—so do we." The same state of disorganized effort that prevailed among the early pioneers, prevailed from force of circumstances in the medical profession. Disorganization bid fair to paralyze all progress. But that hope that springs eternal in the human breast, and the desire for better things, possessed some of the progressive men of the east side of the State, and the Old Indian Territory Medical Association was formed and rode the stormy seas of medical strife and politics. This Association was formed in the City of Muskogee, in May, 1899. In May, 1893, the Oklahoma Territory Medical Association was formed, the meeting being held at Oklahoma City. When the east and west were finally united in this great big State of Oklahoma—the medical profession not to be outdone in its provisions for the future and in its efforts for the most good for the greatest number—called the two societies together in joint meeting and there was organized the one great body—this splendid organization, which it is my great pleasure to preside over to-day. While we have made many great strides in scientific medicine, and the ranks of our profession are being filled with a better class of men, better equipped, better educated, than those of the very early days, yet I often wonder if, with it all, we improve in our treatment of our fellow practitioner, or do we drift along in the same old narrow lines that bound us years ago, when we took our tomahawk and scalpel and proceeded to skin the other fellow? Are we not letting a spirit of commercialism creep into the profession?

The practice of medicine with science is the noblest of all professions—without it, it is the meanest of all trades. And yet because we are not as scientific as we might wish, let each one do the best that is in him, for we can not all be Kings and Princes in the scientific world. Some of us must be servants, and tend on the masters. This must not discourage us, but, rather, tend to make us more diligent, that we may, in time, occupy the same high plane in the scientific world.

The purpose of this address I do not wished construed as an attack upon the individual doctor, or on the Association as a whole, but there are several wholesome truths that the medical profession need to be told. These same things you have been told before and will be told again, for they are old faults, and I guess will always be with us. They will be until the profession as a whole heeds the warning and by improvement of the body as a whole will thus control the individual member.

Organization is the keynote of success in all walks of life. This great country of ours is a pure democracy, and as such each and every citizen may cast one vote, and thus wield such influence as he may in the governing of the body politic. It is surprising to those who attempt to exercise the influence of the medical profession for the getting of laws and the shaping of political events to find how little influence the profession, as such, has. That document by which we all live and die—and for which our ancestors did live and die, the Declaration of Independence—was signed by many physicians. If a new one were to be written to-day how many doctors' names do you think would be signed to the same? Can you name me a doctor in either the House or the Senate to-day? With all our vaunted learning and power in the field of science, we have sadly neglected to attend to the more commonplace things of life until, in some localities, we are about to

be devoured by the dragon of "Isms," "Schisms," and with this the consequent loss of prestige and honor, with which we have tried to benefit and help mankind since the days of Galen. Contrast this with the condition of affairs in the older countries. In the year 1907, twenty-three physicians occupied seats in the French Chamber of Deputies; forty-two in the German law-making body, and a doctor (Doctor Playfair) presided as Speaker of the House of Commons. Can you not conceive that this proper recognition of the fitness of these men to occupy the high positions that they did was a stimulus to the young, aspiring medical man? We all love our profession and work unceasingly for its good and the betterment of mankind; but deep in our heart of hearts, we all would love the admiration and the applause of our fellowman, and the "Well done, thou good and faithful servant" to hand down to posterity.

There are a few exceptions to the rule of obscurity—Doctor Gorgas—whose efficient efforts and learning have placed his name in the Halls of Fame. So, with Dr. Leonard Wood, whose genius, ability and courage, placed our Cuban possessions where they are to-day. These are only the exceptions. In the halls of Congress and in the Army and Navy, where we should of right have some say in the passing events we are considered a very unimportant member of this great Nation, and instead of being in a position to ask for what we need (not what we want) we are in the beggar's position and must take what they give us. But you ask what have I, the individual doctor, to do with this state of affairs?

You have much, my dear doctor; for it is my judgment that the responsibility for this state of affairs is largely with the profession itself. We hitch our wagon to a star all right, and our horoscope reads true, but the 200,000 or more physicians in the United States have shown no inclination to learn the powerful influence they could bring to bear on the shaping of this country's public affairs. Do not misunderstand me—I do not mean that you should all become politicians—or enter the political arena. There may be dirtier places to bathe than the pool of politics, but they are not as handy, or quite as public. The art of medicine is old and honorable, and he who worships at its shrine has chosen an exacting master. The advances are so fast and the demands so exacting that there is little time for diversion, even though that diversion be important. The duties of the profession are high and very absorbing, and the examples set by the older and more experienced men of the profession are such that they have discouraged every younger member from entering upon any untried fields. The principle of this is to all of us right and eminently proper. You must be a doctor all the time—you may not worship at any other shrine—you must have no other Gods before thee.

We all of us feel a sort of commiseration for the fellow medic, who wanders from the straight and narrow path; and I am inclined to think that the feeling is a proper one. It is hard to get away from the old traditions of our great fraternity, and our attitude is very natural. Yet this same attitude of the profession toward those who have either wholly or partially left the profession, to enter the political puddle or take an active interest in the welfare of the Nation, is responsible for the loss of prestige that we enjoy as a factor in the shaping of events at the present time. We

first tolerate the backslider and then, as time wears on, proceed to excommunicate him.

While this attitude is perfectly natural—from a medical standpoint—yet it would seem the part of wisdom to not pursue this course to the destruction of our privileges of citizenship. There must be a happy medium somewhere that the medical profession could reach. Unfortunately, under our system of national and civic life, politics means government. If we choose to do as the Brahmins of old—sit apart, and refuse to serve as public servants, or take any active part in the choosing of those who do represent us—we must content ourselves with such laws as the legislators, chosen by outsiders, for outsiders, may see fit to give us. If we draw the cloak of professional isolation about us, we must expect to have no voice in the making of public events that govern us.

While some among us may say that this is commercialism carried to the last degree, and criticize the leveling of the profession to this degree, there seems to be no other solution. For the mass of the American public get up and hustle for what they want, and they are no respectors of persons or organizations. If that is the only way for us to get what we need, then it would seem the part of wisdom to adapt our profession to the environments as we find them.

The American Medical Association, knowing the great good of organized effort, and appreciating our loss of power and prestige, have as a permanent committee the Committee on Legislation, which, through its separate State and sub-committees, attempts to influence the trend of public affairs as they affect the rights and interests of the medical profession. In my opinion, it would be a sad mistake for a relatively large number of the profession to devote their time and energies to public affairs. However, it should be the duty of every one of us to see to it that we do secure the recognition due as large a body of representative men of learning, ability and disinterested spirit, as is the medical profession.

At the request of the Committee on Medical Education of the American Medical Association I have included in this address what seems to be the present needs of the profession in the line of medical education and privilege of practice:

(a) The appointment of the very best available men on State Boards of Medical Examiners. This is not intended as a criticism of many of the men who are now doing excellent work on those boards, but is given as a general proposition. The standards of preliminary and medical education are rapidly being advanced, but it is often the case that a thoroughly trained, well-educated physician is required to take an examination before men who are far inferior to him in every respect.

(b) The including of practical laboratory and clinical tests in the examination of candidates for license to practice medicine. The written examination as given in the majority of States, can be passed by any intelligent person who may have spent a few brief weeks in the study of quiz compends or some of the shrewdly conducted quiz classes. The present written examination is not an actual test of a man's fitness to practice medicine and such an examination could be passed by a man who may never have made an experiment in a laboratory, who may never have looked through a microscope, or who may never have examined a patient.

Again, the examinations for license to practice medicine in this country

are much easier than those in other countries.. This fact tends to increase the number of foreigners who flock to this country, including a considerable number who probably could not secure licenses at home.

(c) A single portal to the practice of medicine: Individuals who are to treat human ailments are alike in two respects: in the first place they must diagnose in order to recognize what they are endeavoring to treat, and, secondly, what they may fail to do in certain cases, even as much possibly as the things they do, may mean the life or the death of the patient. For these reasons every one who is to treat human ailments, regardless of the particular methods employed, should be required to have a thorough training in the fundamental branches of the medical course. The objections to medical sects, therefore, are not so much because they are sects as it is that their followers enter the medical profession with a smaller amount of preliminary and medical training than do regular physicians.

Regarding appointments to the State Board of Medical Examiners, I think the Governor of this State is to be congratulated on the personnel of the present board. So far as the regular members of the board are concerned (and I presume the same holds true with the other branches of the profession) Governor Cruce has made a selection that must meet with the approval of this society, for every one of them is a man of the strictest integrity and honesty; have the highest of standing in the medical profession and are unimpeachable as good citizens. To cap this they are each one as proficient in their respective attainments as any in the medical profession of the whole State. Now that they have entered into the performance of their duties there is just one word of warning that this Association should give the individual members of the board, and that is: Now that you have accepted this high office, see to it that your professional life does not take so much of your time as to compel you to disregard your duty to the profession and allow your work to be done by proxy.

As regards the suggestion contained in Article "C," this Association can only suggest that if the oral examination is deemed advisable that the present board will adopt the same. For myself I am inclined to think that the adoption of the oral as well as the written examination would not only tend to raise the standard of the class of physicians passing the board, but would as well raise the standard of men who would apply for appointment on the board. It is one thing to compile a set of questions, and then examine them at your leisure, it is a far different task to orally examine a man as to his fitness to practice the healing art. Can you conceive of any of the unfit slipping by our old friend, Dr. LeRoy Long, in an oral examination in anatomy? Of him, it has been said "that he knows more anatomy than any man west of the Mississippi." Don't you think Doctor Fite would find out how much they knew about surgery in a very few minutes conversation? I am sure Doctor Duke could find out whether their nervous and pathological condition was due to a prolonged mental strain or to actual deficiency of gray matter. And I am equally sure that Dr. Herod could ascertain if they were going to be delivered naturally or whether the profession was to be burdened with a monstrosity.

A single portal to the practice of Medicine. This above all other reforms is the one that the medical profession the world over should be working and striving for. More especially here in Oklahoma are we in need of getting

together on the proposition and standing for what is right in the matter. At the last session of the State Legislature the doctors of this State failed to get written on the statute books a law that would have been equal and just to all concerned. It is true that the Kiropractor cried that we were putting him out of business. Be that as it may, the law, as we asked to have it passed, put the only requirement that should be put upon a business that requires only one asset, namely, BRAINS; that each and every applicant should appear before the duly appointed State board and take their examinations in the fundamental branches of the science of healing, and if they were qualified be granted their permit. It was only by the dint of hardest work that the Legislative Committee was able to prevent the passage of a bill allowing the Kiropractor to have a board of his own and to license them at will. The unjustness of this position need not be explained to this body—the moral of it is that the medical profession of this state was not as strong as a handful of Kiropractors. Do not delude yourself into the fond hope that this will be the last of this. At the next session of the Legislature we will be again confronted with the same old fight—and we will be confronted with it until we either let them pass their bill or write one on the books that will equalize all sects and isms in the practice. Do not delude yourself into the belief that you have done your duty when you have elected a new President and he has appointed a new Legislative Committee. While that is a very important Committee, and a very trying one to serve on, still the responsibility for the success of their efforts or of their failure to a large extent depends upon you. Surely the 3500 doctors of the state of Oklahoma can between now and the time the next Legislature meets so influence and mould public opinion that at least we will get a square deal. It is up to you personally to do your part and to keep it up until the fight is either won or lost. Because we have met with one or two or twenty reverses let us still fight the good fight—the wonderful results of scientific medicine have startled the 20th century—and won for the medical profession the endorsement of the business world.

To have men of public affairs take an interest in us and our needs we must take an interest in public affairs. With the mass of the public behind us and our needs and desires there is only one result possible—and that is the success of our efforts along the lines of public policy. Edward William Bok has wisely said that there are two keys to success—A PRINCIPLE AND A METHOD. In the practice of your profession choose HONESTY as your principle, and construe this word in its broadest sense. Business is simply a system of trade between men—you give professional services for a certain fee—that is the visible part of the transaction, but Doctor what is the real basis? The confidence of man in man that certain services are what they are represented to be. Destroy that confidence and what have you left—absolutely nothing. It is not a question of whether you can or cannot—should or should not be honest in the practice of our profession—the condition answers itself, it is not a case of can or cannot—should or should not, BUT A CASE OF MUST. You will see the dishonest practitioner prosper—but watch his progress, sooner or later he will come to the turn in the road. It is bound to

come. There is no escaping it. The longer the dishonest Doctor lasts the harder will be the drop when the fall does come. With HONESTY as our principle let us adopt THOROUGHNESS as our method. This is the surest way to success—thoroughness in everything we do; especially the little things. An absolute regard for the small things is essential to the success of any undertaking and more especially our profession. It is the little courtesies extended your fellow practitioner which make life all the sweeter and cement the profession closer and closer. There is everything in that one word thoroughness—personal interest—concentration—patience—forgetfulness of self—close application—honest work. There are exceptions to the rule, but as a general thing we get paid in our profession for what we do—about in the ratio to the skill with which we do the given task.

No man's success ever depended on the place in which he lived—it always depends on the man himself. It is the man, not the place, that is the drawing power in our profession. It is what you are—not where you are—that counts. Many a large man has expanded in a small place—the vast majority of the people follow a leader—success is the most contagious thing on earth—don't get vaccinated against it—let it get you and leave you crippled for life. Thoroughness is the earning power of success, and success must always be earned. You cannot hurry it. It is like respect—you must earn it. It comes only to us when we are prepared for it, and are ready for it. The best Doctor is the one who does his best for when we make the most of what we do, we make the most of what we are.

SECTION ON PEDIATRICS.

(CHAIRMAN'S ADDRESS) BY W. G. LITTLE, OKMULGEE, OKLAHOMA.

THE CONSERVATION OF CHILD LIFE AS AN ECONOMIC FACTOR TO THE STATE.

“Where a serious trust is imposed negligence becomes a crime.” It matters not whether the trust is one of money and property or one where human life is the commodity. The cheapness of human life as measured by the corporate bodies and by government protection, is proverbial. The sentimental value, as determined by our friendships and blood ties, is outraged by any measure in money considerations. If a life is lost suddenly a great shock is felt in a community; but if by slow processes a life ebbs away, time softens the pang, and the moment of its passing is scarcely noted. In either case the value of the life to the community may be the same. The child in a family, after an illness of a few days, yields up its life and the community is plunged into turbulent sorrow. Another child in the same community may pass his weary days annoyed by large tonsils and adenoids, and contract tuberculosis. His prolonged sufferings elicit scarcely a word of pity or sympathy; indeed he may be the recipient of many unkind remarks, though his is the sorriest and weariest burden. People are so thoughtless, after all these years of Christian training. The savages left their maimed and sick and old to battle for themselves while the tribe went on its way in search of game or the

spoils of war. What are we doing more in this enlightened age? The great United States Government appropriates \$2,000,000 annually to support the life saving service along the coast to rescue those who are shipwrecked, but the same body of law makers refuse to pass a law to compel all railroads to use proper safety devices and thus safeguard human life. The miners are at the mercy of the corporations and neither the United States Government nor the various states exert more than a farcical effort to enact or enforce laws that will safeguard human life. When slavery made human beings a definite possession, having tangible money value to the owner, it was eminently to the possessor's interest to conserve that property, and provide good surroundings that would make toward health and usefulness. When people have no definite property value directly to the individual as a chattel, but are merely part of the body politic, with intrinsic value merged into the great governmental asset, or the wealth of the state, they are considered little as an entity or as a separate individual possession of value, but as a common commodity. The earlier statesmen endeavored to consider the individual because of the inbred regard for human life. With the coming of the great industries of corporate control, the individual was lost sight of except as his worth was shown in actual values to the corporation. When he was of value no longer to them, he was cast forth without further thought. So great became the waste in human lives that a reaction took place, and we are now trying to wrest from the government entrenched corporate greed, and monopolistic control, the tardy care for life that life demands; and fulfill the great laws of civilization as taught by the law giver on the light-crowned mountain and later wrought into a great worldwide ideal, spoken by Him who healed the lepers, taught the deaf to hear, touched the sightless eyes and bade them see, and brought a gospel of hope and sunshine to the poor.

Sounding the deep prevailing thought of these later days, Van Dyke has said, "What are you going to do, my brother man, for this higher side of human life? What contribution are you going to make of your strength, your influence, your money, yourself, to make a cleaner, fuller, happier, longer, nobler life possible for some of your fellow men?"

The world is full of pain and sorrow and misery. So much of it is needless if only all people would think and act properly. Happiness and usefulness are the first aim of living to the normal being. "Life is not to live, but to be well."

To be well is the great trust placed in the care of men and women who are giving their thought and energies to the work of conserving human life, not only in the mass but individually. How are we working? What are we accomplishing?

The average value of life in the United States is \$2900. The average earning capacity of all persons is about \$700 per annum. This, then, places a definite money value on human life as a national or state asset, which should be conserved just as carefully as the forests, the live stock, or the coal and oil deposits. To prolong the average length of life raises the national asset in human life. To reduce the diseases that are preventable not only

lengthens the individual life but the average of life, hence every successful effort in the conservation of human life adds millions of dollars to the national assets and also to the average annual income. To this end, work should be directed along all lines, but until in recent years there has been no logical, rational effort put forth. The efforts have been individual, with little continuity, and entirely haphazard, and in the main the greatest amount of work has been done for the adult, or the active wage-earning class, forgetful of the welfare of the child who is the foundation for the upbuilding of a healthy and useful citizenship. Our duty should be first for the child, as he is the ward of the mature, thoughtful citizen; and it is for the guardian to care for and preserve for future usefulness the one, or ones committed to his guardianship. There are individual and public duties in this regard. The individual duties are those of a parent to his child, the conservation of the home. The child has no power to choose either his parents or the conditions into which he is born. The plan for the home life should embrace the thought of care for the new life that may be the result of the matings. Sunlight, fresh air, cleanliness and proper food, with surroundings of trees, flowers, blue sky and bird songs may be the ideal for the coming child and incidentally for the welfare of the parents themselves. The public has a duty that is far-reaching in preparing for the child and guarding his life through the formative period of his existence. This duty lies in part in compelling sanitary buildings and working conditions for both men and women, that they may have the best possible health, the least amount of fatigue, time and opportunity for healthful recreation, moral and mental enlightenment and sufficient wage or income that they may live properly. The public should prohibit the working of children at continuous and confining tasks, or in places of danger or in unsanitary buildings or unnatural conditions. Expectant mothers should not be allowed to work in the trades or factories or at exhausting labors. The building of sanitary tenements in the cities should be made compulsory. Another duty of a public nature is the establishment of medical inspection of children in the public schools and free treatment for those whose parents or guardians are unable to pay for proper medical care.

I think the statement was made by the Iowa Board of Health that this last year one half of all the children died before reaching the age of five. These deaths were due largely to bowel troubles and other preventable diseases. This is a heavy toll for ignorance and indifference. And consider further, many of those who did not die, were handicapped for life by organic or functional derangements. What is true of Iowa is true also of about every locality, and especially in sections here in the sunny Southland, where filth, decay and vermin abound and multiply so rapidly. "What are you going to do, my brother men?" is a pertinent question to ask, and one that should press its burning significance into our hearts and minds, for it is one both for the heart and for the mind. If that little one was near to you and should become ill because the flies which had regaled themselves at a nearby filth heap, had dragged their loathsome and deadly feet over your baby's food, you would, wisely or unwisely, move heaven and earth to bring relief

"And count all toil as pleasure." But some one has said: "Let the friends furnish the sympathy, the physician is to exercise his scientific skill, his trained mind, and his intelligent judgment." And this is so right. So, we, as men and women of high ideals, noble aims and scientific training, must bring our minds to this problem of the present age and solve it. A beginning has been made but the efforts are so feeble, so widely removed from each other and so scattering. Antitoxin has removed the dangers of diphtheria; the destruction of the mosquito has lessened malaria and yellow fever; the crusade against the rats on our vessels and in our ports has made the plague of little moment and other efforts have been of value, but we "Remain on earth supine" or play again the role the people did of old, when the Pied Piper of Hamelin Town demanded his thousand guilders after he had driven away the rats and saved the children. They refused to pay the price stipulated and drove the saviour of their offspring out of the city, while the children were lost because of their selfishness, intolerance, and love of lucre.

What are we going to do, my brother men? This question comes again and it will be answered but not by us unless we "quit us like men" and grapple with this duty and "work for the joy of the working." The KOCHS and REEDS and a host of others have been willing to lay down their lives to prove their theory of the etiology of disease and its cure. Some of you would no doubt face death without a thought in the discharge of your duties to your patient. But most of us are unwilling to live our lives in the positive, restless effort toward the enlightenment of our fellow travelers through this course of life, when that effort means the spending of mental and bodily comfort. Most of us, I fear, are content to take the modicum of knowledge obtained at our respective medical schools and trade on it the rest of our lives. To prepare an educative address for a public meeting requires too much effort. To aid in the campaign of education disturbs our ease too much. The educational crusade is the solution of the present day problem and no body of men should be more competent or ready for volunteer work than the medical men of the state. They should be fitted by training and inclination to grapple with this great problem of the conservation of human life and be the logical and heroic leaders of the movement. Jane Porter says "Imparting knowledge is only lighting other men's candles at our lamps without depriving ourselves of any flame." A great deal can be accomplished toward the conservation of human life by a general campaign of education. This campaign must reach both the profession and the laity for many in the profession are in need of enlightenment along these lines as well as others who are not physicians.

It is easy to tell how things are wrong but quite another affair to prescribe the remedy or offer a solution of the difficulty. That such a criticism on this address may not be made justly, a suggestive method of work will be outlined and submitted for your consideration. This society should create a committee of three or five well qualified physicians whose duty it should be to organize the educational crusade over the state. They should secure a physician in each county or court district who would be able to present this educational work in public gatherings in an able and pleasing manner. They

should collaborate material for use in this work and as part of the society printing send it to every worker for distribution. They should secure illustrations for a picture study of this work. They should arrange to co-operate with women's clubs and utilize every means for teaching the public. They should co-operate with the Legislative Committee to secure medical inspection of the schools and arrange for supplying every school child with a work on hygiene for use in the schools, this book to be compiled by a corps of physicians in the state, and the same to be printed by the state and supplied free to the schools. They should, in conjunction with the Legislative Committee work for a law empowering Boards of Education to secure a resident medical lecturer who should lecture once or twice each month before the school on suitable topics relative to the personal and public health. Lastly the state journal should open to this committee so that it could reach the members of the Association each month with pertinent, insistent information, provocative of active, earnest co-operative work. The medical conscience needs renovation and rejuvenation. When Sir Launfal searched for the Holy Grail he was told,

"Who gives himself with his gift feeds three,
Himself, his hungering neighbor and Me."

Likewise with us as physicians while we are following our active duties of ministering to the sick, the maimed, and the dying, let us lend ourselves to this great, unselfish, and gratuitous work for humanity as a whole, knowing that we lesson not our own "flame while lighting other people's candles."

But the children of today are the men and women of tomorrow. As an economic measure it would pay the state to safeguard the physical well-being of the child. The more nearly physically sound is the child the more nearly sound physically will be the man or woman and the better equipped for life's demands. Other things being equal, a sound body is more apt to produce or foster a sound mind, one evenly balanced, alert, creative, strong and aggressive. And again, a sound body will give a better, sounder, moral outlook for the individual, stronger to resist the evil tendencies and more free from the taint or bias that easily lets the adult slip into crime. Crime costs the state an immense amount of money; jails provided, courts to establish and maintain; reform schools to take the young culprit after he has fallen in crime and try to train out that bias for evil. True, the state cannot exert a paternalism, to any great extent, over its citizens, but it can provide for their welfare in a way to secure more stalwart citizens in the bone and fibre of their physical, mental and moral make up. To do this it must deal with the child. And not only that but be mindful also of the ancestry. Legislators should be versed in eugenics. Men and women may be habitually vicious but because they are human adults, is not reason enough that they should be granted the freedom of propagating their kind, and load their burden of crime, imbecility, degeneracy and indigence upon the public. Neither should the great Christian state of today need to plead for charity that many of the evils of the present time may be corrected.

I believe it would be economy for the state to employ a few men well

versed in medicine, hygiene, sanitation and eugenics, to give their time to teach and train the people of the state how to live and especially to instruct the fathers, mothers, teachers and schoolboards the proper means of conserving the life and health of the child, to the end that a more effective citizenship may arise, stronger in all the virtues of life; more nearly free from the vices that sap the vitality of the body politic, until we shall approximate more nearly to that Utopian dream of old English scholar; or fulfill the beauty of that vision of our own picturesque and noted dreamer, who has given us a vision of "The Building of the City Beautiful" where "the tempted, the tried, and the fallen, have the true, the beautiful and the good," instilled into their souls and they forget the former things in the glory of the present splendor.

SECTION ON GENERAL MEDICINE.

(CHAIRMAN'S ADDRESS) BY J. H. SCOTT, SHAWNEE, OKLAHOMA.

In this day of scientific medical and surgical knowledge, when by the bedside of every sufferer, by every couch of agony, is a scientifically equipped man with instruments, knowledge and experience to guide him, standing wrestling with the grim monster, often overcoming him as if by magic or divine power, we are constrained to stop and say: What has the doctor been, what is he now and what will he be in the future?

There is no greater deed done for the benefit of man than is done by him who is ministering to the suffering and the distressed, and when we take a retrospective of the doctor for the past centuries and say—what has the doctor been—we find much to his glory in his work in alleviating pain and suffering and in his activity in investigation, experiment and research. But when we view the other side of the picture and observe him groping about in darkness, and in ignorance colored with superstition, we are appalled by the havoc that is wrought and the lives that have been sacrificed because of such ignorance.

We might refer to the various epidemics of infectious diseases, that have raged in times past, causing greater destruction of human life, than all the recorded destruction of life of all the wars, and in the presence of which the scientific medical man was as helpless as a babe battling against the current of the great Niagara. As special instance of such helpless and deplorable conditions I can mention the yellow fever epidemics in Vera Cruz, Havana, Martinique, Santa Domingo, Santiago, Manzanillo, Rio Jenero and other cities of the world with all of its horrible devastation, and in this country in 1878 and previous periods for one hundred years back, when all the cities of the South were repeatedly almost depopulated. Even old Philadelphia at different times had an enormous death rate therefrom, and Boston, New York and other northern points were involved in a small way.

Again, the great cholera epidemics of the world of the ages past at Calcutta, Bombay, Manilla, Paris, Warsaw, Berlin, Vienna, London, Havanna and finally the cities of our own country, namely, Charleston, New York, Philadelphia and Baltimore, being almost omnipresent from Canada to Yuca-

tan. In fact, counting back through the ages you could almost say that it had scourged every city and every country of the world, and medical science stood helpless and awe-stricken.

Again, the ancient ravages of malaria, the crudeness of surgery, the bubonic plague, the small pox epidemics and the Fifteenth Century reign of syphilis, when peasant, Prince and King were alike afflicted, are all landmarks of the helpless condition of medical science of that age.

The helplessness of the profession on these occasions was distressing and the ignorance from the present viewpoint was appalling.

In the light of these observations, can we wonder that our profession stands for much criticism and opposition? In meditating upon this phase of the question I wonder if there ever was a time in the past, that we were not in bad repute. In trying to inform myself in this respect, I have made reference to the history of the past centuries and find that in all the ages we have had to contend with the same criticism and condemnation. I have even referred to holy writ for consolation. In the fifth chapter of Mark, the twenty-fifth and twenty-sixth verses, we read: "And a certain woman which had been afflicted of a certain disease and had suffered many things of many physicians and had spent all that she had and was nothing better, but rather grew worse."

I searched still farther back into holy writ centuries before the time of Christ to find a word that approves or commends the physician. I find in Second Chronicles, sixteenth chapter, twelfth and thirteenth verses, we read: "And Asa in the thirtieth and ninth year of his reign was diseased in his feet until his disease was exceeding great, yet in his disease he sought not to the Lord but to the physicians, and Asa slept with his fathers."

Deplorable as this condition was, it has not all been allowed to pass for naught. While our fathers were baffled and helpless because of the lack of knowledge or because of working upon false theories or hypotheses, yet it is now and indeed it has been and forever may it so continue, the glory of the medical profession that their allegiance is one and undivided, for their service is solely in the cause of truth and humanity, and the march of medical science through the ages has been ever onward and upward toward those lofty goals—the prevention of disease, the relief of suffering and the improvement of the race. Through all the ages of disaster they have thought, observed, theorized, investigated and experimented. They have endured and perserved with persistant energy, overcoming obstacles with all of the force of the knowledge that they possessed, until at this time, when we say—What is the doctor now?—we have many flattering and brilliant things to record of him.

The achievements in surgery have been well nigh spectacular. From the old-time picture of the operation to be performed as a last resort, with the patient strapped to the table and held by strong men while he writhed in agony, following with the infected wound, violent inflammation, quantities of "laudable pus," severe peritonitis in practically all intra peritoneal operations, and the high mortality through all, we turn to the

present-day picture of the myriads of patients sleeping in peaceful unconsciousness while undergoing operations for countless varieties of afflictions, with a mortality so low that it seems incredible and a diagnosis so comparatively accurate as to be very satisfying.

On the medical side we see the old-time drunkard with his habit-formed appetite gnawing, so to speak, at his very vitals, turned over to the moral suasive power of the pastor and interested friends or to a determination born of a penniless condition and a friendless, forsaken, remorseful or cowardly state of mind, to the present-day alcoholic or drug fiend in the modern sanitarium, relieved of his slavish appetite in a few days and ready to contend with the world without the handicap of an awful appetite.

Small pox has been robbed of its loathsomeness and its awful carnage of death, by the discovery and use of vaccination, and today the mortality has been reduced until a death from small pox is indeed a rarity, and its loathsomeness has vanished. Through the discovery and use of antitoxin, diphtheria has been robbed of its terror. While formerly, unless death intervened, it was a constant conflict for two weeks battling each hour or each few minutes with swab and spray and nostrum. Now one, two or three early injections of antitoxin and the battle is won without a struggle; the patient recovers so easily and quickly that we are sometimes inclined to doubt our diagnosis.

Malaria, the foe of the pioneer, since the day of quinine, the screen, the drainage of swamps and the petroleum application to ponds, has no more terror for the white man. Its haunts are invaded and the land of black death is converted into a health resort.

The Fifteenth Century syphilitic reign of terror will never return, and since the development of "606" and the probable advance along that line, the final eradication of this curse of mankind seems probable within the next half century.

Recently in the Philippines, and in numerous places in Japan and the Orient, Beri-Beri made much trouble in the armies and navies in those regions, as well as attacking private citizens of those countries. The condition gave the physicians much concern, but by a systematic, thorough and scientific investigation they solved the mystery, and at the 1910 meeting of the Far Eastern Association of Tropical Medicine a rational and certain method for prevention was reported and now the Beri-Beri has no terror for the physician nor the populace.

Most brilliant has been the result of the fight against and the control of yellow fever and the bubonic plague. By the sacrifice of human life and the running of the gauntlet of disease, that seemed to and did mean certain death, by courageous physicians, who were willing to take the chance and if need be yield up their lives for the sake of humanity and scientific knowledge, we now know to an exact certainty the cause, the behavior and the means of control of these dreaded maladies.

The quarantine method of the Government Marine Hospital Service deserves special mention in considering the present-day methods of handling

disease. In two of our neighboring cities we have an object lesson, showing the difference between doing things thoroughly and conscientiously, and the doing of the same things under the weight of commercial interest, by a cowardly political doctor, for political preferment or greed or graft. When the yellow fever made its appearance in New Orleans in 1905, under the control of the local Health Department appointee, whoever he was, the fever and infection was spreading with an alarming rapidity. But when the Marine Hospital Corps took hold of the situation, by rigid quarantine, the universal examination of the whole population, the isolation and screening of all patients and suspects, the yellow jack began to melt away like a snow-bank under the burning rays of a torrid sun. Be it said to the credit of the advancement in medical knowledge and its scientific application, that never before in the history of all time has the yellow jack, after making its appearance in this zone, stopped its ravages before the coming of the frost.

When the bubonic plague showed up in San Francisco in 1903, the same thing happened. Commercial fear, the influence of the commercial interest over the local political Health Department, interfered with a rigid quarantine and the plague was spreading with alarming rapidity. But when the Marine Hospital Corps took charge of the situation, the disease was soon under control and in a short time was a thing of the past. By this prompt, positive and thorough proceeding we are free from a disastrous epidemic similar to what the Chinese Empire is now struggling with.

In further testimony of what this great organization can do, and has done, by its power and its willingness to use the knowledge in possession of our profession, I merely refer to the accomplishments in the Panama Canal Zone as another object lesson. By the records of such recent history that it is a matter of common knowledge of us all, we know what can be done, because it has been done in that zone.

No greater engineer ever lived than De Lesseps, who planned and started the Panama Canal, and the failure of the French Government to complete this great undertaking, was not because of lack of financial and engineering ability, but because the infectious diseases prevalent in that zone, annihilated the army of laborers and the vast number of recruits sent to them, in such a short space of time, that the sacrifice of life was too great to permit of a continuation of the work. The success that is promised the undertaking of the United States Government in that work is not because of superior engineering or financial ability, but is wholly and solely because of the achievements of medical knowledge, gained by scientific research and applied in such a thorough way that it has driven the infectious disease from that territory and has protected the workmen from its ravages.

And now, finally, we say, What will the doctor be in the future? He will be a greater factor in the prevention of disease than he is to-day. By his advice and emanating from his influence we will have a National Health department which will remove the local commercial influence, and this, with the knowledge yet to be gained of cause and habit of disease germs, by the

persistent, thorough and conscientious research to be carried on for generations yet to come, by the faithful and sacrificing medical fraternity, will make sickness from contagious, infectious and preventable disease a rare occurrence. Upon his recommendation State Schools will teach medical theory and science on the same basis that they teach any other science; thus again removing this splendid profession another step from the burden of commercialism. By the same advice the State Schools will arrange the courses of study in all the grades of the common school, so that certain elemental and positively proven facts concerning health, hygiene and the prevention of disease, will be taught in their proper place to the young and impressionable mind, from the primary grade to the last year of High School, thus furnishing a basis of universal common knowledge to make easy the task of preventing disease.

Will there be any "isms" in the future? In proportion to the knowledge of the common people as to the real and unreal in the "isms," they will flourish or diminish; for, under the blazing light of real fact and real knowledge, the mystic and the mysterious of the "ism" fades away as the night before a noonday sun. By the universal knowledge made possible by the teaching in all of the State Schools above referred to, and by the rules of health and hygiene enforced, and the information promulgated by the National Health Department, the real and unreal will be plain to us all and real fact and real knowledge will be the heritage of the common people. In that time the "isms" will be as much a matter of past history as the witchcraft of long ago is a matter of past history to-day.

Even now this national control is beginning to dawn, and Oklahoma, the bright star in the galaxy of States, is at the helm. After forty years of stew and fret, and proposition, and criticism and counter-criticism in matters of health, hygiene and quarantine regulation, our own fellow citizen and a townsman of this beautiful city in which we are assembled, jumped aboard the drifting, disorderly craft and has seized the rudder of necessity and truth, and is steering the bark, laden with a cargo of now useless facts and figures and conditions, into the harbor of the National Government, that they may be used in arranging a National Health Department, for the good of the people of this Nation, and as an object lesson to the whole world. May the members of this Association stand to the back and encourage this noble son of Oklahoma in his undertaking.

All hail Robert L. Owen of Oklahoma.

SECTIONS ON GYNECOLOGY AND OBSTETRICS.

(CHAIRMAN'S ADDRESS) BY B. W. FREER, NOWATA, OKLAHOMA.

"NECESSARY POINTS FOR A PROGRESSIVE PHYSICIAN."

The physician of to-day must be progressive, to be successful he must be a student; but the first thing to be considered is the selection of the profession as a life work. I think a man should thoroughly examine himself, look both within and without; be sure he has chosen the profession he loves

most; and be sure it is permanent and not a temporary delusion. He should have general love for the profession, then it will grow upon him with increased familiarity. I hold every physician a debtor to his profession, from which we, as men, of course, seek to receive countenance and profit; so ought we of duty to endeavor, ourselves by way of amends, to self-ornament there unto.

There is need of great courage; most of us must travel our rough roads in life; for example, a call some stormy night to a case of obstetrics when we know there is no remuneration whatever in dollars and cents. This we think a dark and gloomy road, or what is commonly called hard luck. Oft times it seems there will never come an opening for the newly born aspirations and the laity as yet is not prepared for the new prophet; but ordinarily the inward movement will find a repose in the outer world. Providence will always answer to the cry of the human heart, and what you earnestly desire will become possible to you in the unfolding of Life's scroll. An intense desire to travel certain roads will never yield to slight obstacles; but after long and tedious perseverance, no avenue of hope opening, you may take it for granted that Providence does not lead in that direction. It is very unwise to precipitate in choosing a life occupation, as there is only one life to live and a mistake at the outset may entail misery and discontent upon our whole existence. Those of us whose hair is bleached white with facing the cold stormy night, or sitting up night after night by the bedside of an extremely nervous mother, to greet the young American and see that he lands safely, should not become discouraged; as there was Moses who was 80 years old before he found his true sphere in life. Numbers of our most noted men never made their mark in life until they had arrived at a ripe old age. The anatomist, our noted Gray, after failing three times, said: "I will write an anatomy that the world will read."

No doubt some of us have thought we had missed our calling, but as a rule he who succeeds at one thing will succeed at another, and he who fails at one thing will fail at another. Conditions seldom adapt themselves to individuals.

A most important point is that of preparation. What I term the truly educated physician is the man who is self-contained, self-impelled, and self-controlled. A physician of this type is naturally self-adjusting. To be a successful physician one must take facts like grains of sand; first, grind them, bolt them, leaven them, knead them, bake them, and carve them; then he has something possessing a market value, and the laity will soon advance it to the par value. The true keynote to success in any line of business lies in the possession of the capacity to think, to reason, to weigh, to adjust, to deduce, to conclude, to decide, and then to act upon the decision. But let us keep busy, do what we can, and do it well, keeping in view all the while our cherished hope. Let us prepare ourselves for wielding our sceptre at the proper time by doing with all fidelity the duties of our present sphere.

Many physicians have made failures as well as men of other professions, simply because they were unprepared. Let us be wide-awake, up and doing,

and last but not least, timely. When a physician is called to some popular post of usefulness, as Moses to his great work of deliverance, we as physicians, exclaim: "Oh! what luck!" or "Oh! if I could have such a chance!" But really there was neither luck nor chance; for all the while the envied one has been steadily preparing himself in the lower sphere of efficiency for the higher life to which he has arisen; here, therefore, is the harmonizing principle between ambition and contentment. The true or progressive physician is always eager to do his best and attain a higher sphere in life, yet he does what he can where he is, and does it well, applying himself diligently all the while; thus doing, he is content until it is time for him to rise, when this time does come he is prepared to step into it wisely and gracefully.

The physician who at once vaults into greatness may be compared to those who become suddenly rich, commonly squander their influence and make themselves ridiculous by not being qualified to fill the place, but, on the other hand, he who waits and works while he waits, applying himself diligently, will surely emerge at length and his work will be worthy of his hire. He will assume his new sphere of work with no sign of egotism, but gradually ascend the ladder of fame. He set his standard high and gradually ascended to the equilibrium of that sphere. Our professional attainments in life will never jump higher than our motives, plans and aspirations. The more a man rises the more earnest he is to do the work he was sent to do.

Life is short and every step of it is full of destiny. Did you ever stop to think that no physician can do the work of another? There has always been something fascinating in the thought that there is a work for each and every human being in this world, if we will only prepare ourselves for it. Let us strive, study, and so conduct ourselves that we may be missed with sorrow when we are called to the eternal beyond.

Coming strictly to this particular branch of study, I shall endeavor to present a few thoughts concerning the use of chloroform in confinement. In these few remarks I will omit the precautions laid down in textbooks on the use of chloroform, as all of you are familiar with that. In the year 1902, after listening to the discussion by some of the best posted men in the Ohio Valley Medical Association, also some of the best posted men in the Tri-State Medical Association, and some of the best posted men in the country, all of which were about equally divided as to whether or not chloroform should be used in obstetrics, I came home with the matter settled in my mind that I would use it invariably wherever possible. Since then I have used it in the majority of my cases. I had the pleasure of attending the same Association last fall, in all there were about 3,000 physicians in attendance, and they were unanimous in saying that chloroform should be used in every case possible. All of the textbooks I have had the pleasure of reading have very little to say on this subject. I have attended these meetings every year since 1902, and as yet there has been no bad reports from the use of chloroform in confinement.

We as progressive physicians owe it to the noble and courageous mothers

who have to bear the horrible misery and suffering, as they have to suffer nine long months before bringing us to this world. Now if we can diminish this misery and suffering there will be fewer abortions and you will find there will be more people following Teddy Roosevelt's advice.

Another reason for using ehloroform is that it shortens the period of labor from one-third to one-half the time; espeecially in eases like this: Take Primipera 30 to 35 short, stout build, small vagina, hard rigid os; give enough ehloroform to deaden the pain, introduce the index finger, and make little traction on the external os, and you will be surprised how easy it will dilate; while if you attempt to dilate without it, it will give the mother so much pain that it will be impossible. I have always taken Lusk's advice in never giving ehloroform after expulsion of head of the ferotus. I have never had any trouble with hemorrhage from plaecenta that Lusk speaks of. Another way, when the labor pains are 30 or 40 minutes apart, give some ehloroform, just enough to relieve the patient, introduce your finger and you will be surprised how much faster the os will dilate under the anesthetic than without it. If you should give too much ehloroform the pains will retrograde, then let up on the ehloroform. I wish to state here that it is impossible to lay down any specified rule, as each case has to be handled differently. The point to observe is to keep your patient just suffieiently under it so the pain is not severe; and in this way, you will not affect the contraction of the uterus.

Lusk says in his works, we should use ehloroform in almost all eases. It seems to me the hesitaney manifested regarding the general adoption, is due in a large measure to the fact that few practitioners give themselves the modus operandi to study the limitations of its usefulness or to learn the conditions of the safe administration. It should be steadfastly borne in mind that the giving of an enesthetic in labor is an art to be acquired, a very simple one, perhaps, but the practiee of which admits neither ignorance nor carelessness.

Another reason for the use of ehloroform is that there are fewer lacerations. By keeping your patient anesthetized you will relieve the intense pain and rigidity of muscles, and therefore have very few lacerated cervex and rarely ever a lacerated-perinium. Another point is that I believe there is very little danger in giving ehloroform in confinement. I have used it for a period of ten years, and have given it where patient had heart leasions, and wouldn't dare to give it for an operation of any kind, but in confinement give it with no bad results whatever. I have in mind a little Jewess 35 Primipera, weight 160 pounds, very closely built, small vagina, with bad mitral trouble and some albumin in urine. She had repeated attacks of appendicitis previous to this; her physicians in Indianapolis and Toledo had refused to operate, owing to the heart leasion. I was called about 4 a. m., stayed all day and all night. Patient had pretty hard pains all night with little progress. I had not given any ehloroform on aecount of the heart leasions and the albumin, but the os was still hard and rigid. Pains were very hard and severe, so I decided I would try my anesthetic during pain,

and it worked like magic. In three hours the mother was delivered with no laceration of cervix and very little of perinium.

Therefore, by the use of chloroform we have fewer lacerations of os perineum, and shorten the time of labor and thus be the recipient of more obstetrical work. We also relieve the intense suffering and thereby diminish abortions, helping more women to Heaven and performing the duty we owe to the good mothers of our land.

I believe the sorrow and misery of confinement is the cause of so many divorces; and I am sure it is the cause of many a true, honest mother's committing one of the most horrible and unpardonable sins. If we will use chloroform we can keep many a child from being murdered in utero, and by so doing we may accomplish a world of good, and if we never receive any honors or compensations here on earth, we will surely add stars to our crown in the final Judgment Day.

SECTION ON SURGERY

CHAIRMAN'S ADDRESS, DR. ROSS GROSSHART, TULSA, OKLAHOMA.

Surgeons and Physicians of the State of Oklahoma: You bestowed upon me, one year ago, the honor of acting as your Chairman for this meeting, and as to how well I have served you, I will allow you to be the judge.

I have a program which I believe will be entertaining as well as educational.

Some of you may think it strange that there is not a surgeon on the program who is not an Oklahoman, and for this omission, I wish to give my reasons:

First: I believe we have in our state as good talent as there is in the world, had they the proper indorsement from the physicians.

Second: There are State Medical Societies who do not recognize us as having any talent and will not allow a member of our society to participate in a program before their societies, and I am of a retaliating spirit.

Third: When we invite surgeons to attend our society and offer an essay, they invariably have a paper which contains plenty of self-praise and very little surgery. Their main object being to make an impression upon the physicians and the laity to induce them to refer their surgery to themselves.

I will lay a wager that there is not a man within the sound of my voice who can recall a single instance where a surgeon, visiting a neighboring State Society did not come before that society, thinking he would stimulate his own case and not as a teacher of the science of surgery or medicine.

We are a young society and the sooner we educate the public that we are able to stand alone and cope with the surgical and medical conditions that come before us, the quicker we will establish a confidence in our people and by keeping them at home we will build up the profession as a whole.

Now, I hope that I have not left the impression on the society that I am jealous of the profession outside of this State, but I would like for the

medical profession of the State to wake up to the fact that just as long as they call in one of their professors or some surgeon or physician to council with them or do their surgery for them, just so long will the laity look upon us as inferior men of science.

The laymen has come to the conclusion if he or she is advised by their family physician that they will have to undergo a surgical operation, that they will have to get relief by going to the city; and as a rule, they are advised to go to some surgeon or physician who has been in the Society and made an impression, or back to one of our professors who taught the branch while we were in school.

Now, as I have said before, we have the talent in Oklahoma to cope with any condition that may arise. Why not handle our own cases and encourage that line of talent that has not been developed in our midst and educate the public that they can get in Oklahoma anything that they can get in Kansas City, Chicago, Rochester or New York.

Now, gentlemen, I am going to ask the surgeons of Oklahoma to start from this meeting and devise ways and means to organize a surgical society for the State to meet quarterly, one meeting to be held with the State meeting so that it will not conflict with the State Society.

Hoping that I have not left the wrong impression, I beg to submit this to the Society.

LARYNGEAL TUBERCULOSIS.

CHAIRMAN'S ADDRESS, SECTION ON DISEASES OF THE EYE, EAR, NOSE AND THROAT
BY DR. M. K. THOMPSON, MUSKOGEE.

The diagnosis and clinical study of laryngeal tuberculosis is of much interest not only to the laryngologist but also to the general practitioner.

In many instances the attention is directed to the throat and larynx primarily with no other clinical symptoms of tuberculosis. The patient may perhaps come to the specialist with, as he considers it, some trivial laryngeal affection, believing he should be cured in a treatment or two. Many times are we called upon to pass judgment upon a systemic infection by our laryngeal findings. This has been my misfortune many times the last few years. Therefore, being specially interested in this from a selfish motive, to elicit your discussion, I decided to bore you for a short time.

Since the time of Hippocrates about 400 B. C., who, perhaps, was the first to describe laryngeal tuberculosis, at least the first of whom we have any record, there has been much study and discussion of this particular infected point. Because of the locality and relationship the larynx is markedly susceptible to infection. As to the route by which the tubercle bacilli enters there has been much diversity of opinion. Whether it be a primary infection deposited by food or air bacilli laden, or from auto infection through sputum, blood or lymph. However, cases have been found and demonstrated by post mortem examinations to be in a healthy and normal condition as regards tuberculosis other than the larynx. We know, further, that tubercle bacilli may be latent for years in the tonsils or lymphatic system, and from glandular irritation, traumatism or inflammatory condi-

tions, by the lymph or the blood be transmitted to the larynx or other regions. But in a normal, healthy person, the condition is such as to nearly preclude primary infection.

Theoretically, however, we must admit a possible primary infection, conditions being favorable. We know that air breathed through the nose before reaching the larynx is to a very great extent freed from all dust and germs. A few, however, do reach the larynx and lungs. Although an inflammatory condition of the larynx would not be necessary for infection, yet an inflamed or a previously inflamed condition, with erosions and power of resistance diminished, organism might thus gain entrance. We do not find a larger per cent of laryngeal involvement in unsanitary surroundings and in unhealthy occupations or crowded cities than under more favorable circumstances.

There is no question but that most laryngeal involvement is a secondary infection. As to just how the infection is produced is a matter of much discussion, whether it be from sputum, bacilla laden or blood and lymphatics. There is much argument, theory and facts on both sides, and yet we know that either and all are possible means of infection. Some offer in support of lymphatic and blood infection arguments that the laryngeal involvement is more marked on the side in which the pulmonary infection is most advanced. Granting this to be true others give as the cause for this involvement a pressure of the laryngeal recurrent nerve by incipient apex tubercules causing an intermittent hoarseness from paresis of the chords and later signs of infection. Another reason given is when there is marked pulmonary involvement that side of the body is naturally weakened and predisposed to infection. Histological examinations show more or less swelling, covered by healthy mucus membranes, with the bacilli increasing in number from without, in which would tend to prove infection from within. But we must remember, as shown by many experiments, that bacilli may pass through healthy mucus membrane and glands without showing the point of entrance and multiply rapidly in the sub-epithelial layers.

As regards the sputum infection we see that the parts of the larynx most usually affected are those which would come most frequently in contact with passing sputum and most subject to irritation, as noted by many different men, namely, the vocal chords, posterior walls, arytenoid cartilages, and so on, but with the exception of the epiglottis which is not so frequently involved as its exposed position would cause us to expect. However, at times we see the larynx affected when there is very little or no sputum from either an incipient or quiescent pulmonary involvement. Further, we know that because of the frequent catarrhal laryngitis there would be here a point of least resistance. The numerous theories with reference to whether the laryngeal involvement be an endogenous or an exogenous infection is far from being settled. While the evidence shows either may exist, but most commonly is the infection carried by the blood and lymph.

As to the percentage of laryngeal involvement in connection with

pulmonary tuberculosis, the statistics taken principally from the dead house vary very greatly, from one per cent to ninety-seven per cent, as seen by different observers. The most common age for infection is between the ages of twenty and forty; in fact, statistics show a much larger number between the ages of twenty and thirty, with at least two males to each female thus affected, which may be accounted for by his occupation and unhealthy surroundings, with perhaps a free use of tobacco and alcohol as a factor, only by reducing the tissue resistance for disease. In fact, anything or disease which may have caused a lessening of the laryngeal resistance either locally or constitutionally, may be a factor, such as acute or chronic laryngitis, syphilis, and all such diseases affecting the larynx, from which the tubercle involvement must be differentiated.

Whether it be a primary or secondary infection, the pathological changes are the same. The first changes after the infection of the bacilli beneath the mucous membrane is the round cell infiltration and the formation of the tubercle and the giant cell. These tubercles may be scattered or piled up causing a tumor. When the proliferation is rapid and because of the interference of nutrition by overcrowding and the inherent toxin of the bacilli there will be a cloudy swelling and perhaps cheesy degenerations, and if pus producing bacteria gain access to these degenerate cells suppuration begins, with ulceration, producing what is termed the second stage. Most usually the laryngeal symptoms are overlooked even when there is a marked pulmonary involvement until the laryngeal ulcerative stage is reached. These ulcers are usually superficial, irregular shaped, with no marginal elevation or inflammatory zone. Edema is frequently found of the ary epiglottis folds and ulcers are commonly found on the ary epiglottic folds, epiglottis and vocal cords, posterior walls of the larynx and the ventricular bands and especially in that portion where we most frequently have continued irritation by the passage of sputum, as we have seen before. The symptoms depend upon the stage and location of the involvement. In the earlier stages or that of the tubercle, the most marked symptom is that produced on the voice which may be hoarse and changeable at times, because of tubercles on the cords or in the inter arytenoid region by their mechanical interference, preventing the approximation of the cord, also by pus on the cords from the larynx or ulcers, which is removed only by an effort. Also by a paresis of the recurrent laryngeal nerve, exudate at the apex of the lungs and a weakened condition of the patient. Respiration is not usually interfered with by the tubercle, but there may be a hacking cough caused by the irritation of the tubercle tumor. Pain is not usual in the early stages except where there is marked involvement of the epiglottis or ary epiglottic fold. When ulcers follow the tubercle the symptoms are more marked in the particular region affected, owing to increased secretion, the throat is cleared more frequently with perhaps some blood streaks. If the epiglottis or epiglottic folds are ulcerated swallowing becomes very painful. The voice is more interfered with where the interior of the larynx is affected, but the pain

is not so marked here. Systemic symptoms are those of pulmonary tuberculosis, elevation of temperature, night sweats, anemia and other septic symptoms. Physical examination shows mucous membrane pale, blood vessels slightly dilated, small congested areas or perhaps pear shape swelling in the ary epiglottic folds, may be small grayish elevated spots the size of a pin head, small tumors irregular in shape. When ulcerated the larynx shows edema of the ary epiglottic folds and if the epiglottis is ulcerated it will be found to be thickened, swollen and pale and very difficult to see the interior of the larynx, cords are ulcerated, irregular in shape, serrated, mouse-nibbled; inability to approximate from the swelling owing to muscular involvement, loss of substance, paralysis of the recurrent laryngeal nerve.

Diagnosis of a typical case of laryngeal tuberculosis is not difficult, as secondary to pulmonary infection. However, in an apparently healthy individual an incipient laryngeal tuberculosis is very difficult to differentiate from a catarrhal hyperthrophy, syphilis, lupus, carcinoma, and many other inflammatory processes. The prognosis is always grave, but depends somewhat upon the pulmonary involvement. The period of discovery and general condition of the patient. There are some cases where only a portion of the lungs are involved, and when these areas are surrounded by connective tissue, the disease is slow and the patient may recover, but where there is acute pulmonary involvement, with laryngeal complications, the patient usually lives only a short time, especially where there is an ulcer of the epiglottis and ary-epiglottic folds because pain on deglutition is so severe that the patient does not take sufficient food and thus is unable to assist nature in the cure. This must be considered the degree of pulmonary involvement, the power of resistance and location of the laryngeal involvement. Many other conditions of the patient must also be taken into consideration. Pregnancy renders the prognosis very grave. Syphilis also renders prognosis very grave. Age, as also the very young and very old is unfavorable. Some spontaneous cures are reported. Many times when the disease is apparently cured there will be a recurrence from some cause or other which is worse than the original attack. The treatment is hygienic, dietetic, constitutional and local. The surroundings should be the best possible obtainable under the circumstances. The patient should be kept out in the open as much as possible, for pure air and sunshine; if possible, should be sent to a high and moderately dry climate. Unfortunately, there is no climate suitable for each and all cases. The patient must be cautioned with regard to the care of the sputum for the protection of those around them, and should use only such things as can be burned after use. The diet should be the most nutritious possible, and at very frequent intervals. Constitutionally, the treatment is the same as pulmonary tuberculosis, stimulants, tonics and tissue builders. Locally, the treatment is dependent upon the stage and nature of the involvement. The greater majority of cases require no treatment. The remedies used are inhalations, sprays, insufflations, pigments, intro-laryngeal injections and sub-mucous injections. Small tubercles should not be disturbed, but when sufficiently enlarged to cause dyspnea aphonia

or other disturbing symptoms, it may be necessary to remove them, after which some of the pigments or some other curative remedy should be applied.

Laryngeal ulcers are treated by curetting, insufflation, and application of the pigments. Those most commonly used are lactic acid, formalin, argyrol, The ray, radium, sunlight, arc light and other lights, are used but seem to exert very little, if any, influence. In the latter stages, when very painful, morphine and cocaine may be given freely to render the few remaining days of the patient as comfortable as possible. The performance of tracheotomy, intubation, thorotomy, laryngectomy, in the latter states of the disease must be considered. By some they are advised and others advise against their use. The laryngeal ulcers are frequently so painful that special attention must be given to the feeding. Liquids only can be given. Sometimes hot, other times ice cold liquids are more acceptable, especially if there is much edema, perhaps with the head hanging down it may be necessary to use a tube or even a stomach pump may be employed. In extreme cases rectal alimentation is the final resort. Fortunately for the patient, where the condition reaches this stage, death shortly brings relief.

"PELLAGRA."

Address of the Chairman, Section on Mental and Nervous Diseases.

F. B. ERWIN, Norman, Oklahoma.

Before entering directly upon the discussion of my paper, I wish to thank all who have assisted me in this section, especially those who have been so kind as to contribute papers. I know it has meant some effort and time to do this, therefore, I assure you that I appreciate your efforts.

It frequently happens that a Chairman does not take any definite subject, but gives a general discussion of the entire subject. However, I felt that most, if not all, of you would have equally as good, if not a better knowledge of a general discussion of this subject than I, and that I might be able to offer a few thoughts which might be of more interest to you by taking a definite subject, thus this paper.

It may seem strange that I would present this subject to you in this section, but it has been quite forcibly brought to my notice since my connection with the Hospital at Norman. While there are many bodily, besides the mental and nervous symptoms connected with this disease, yet the dominant one in the cases that I have seen, was the mental and nervous.

This disease seems to have originated in Italy and surrounding regions, and was recognized there many years before it was diagnosed in this country. It seems to have been found, as a rule, among the very poorest classes, and in that region of the country where the people consumed a great deal of maize, of which a considerable part was of the poorest quality, hence, the supposed etiology of the disease by some. This disease seems to predominate in the southern states in this country, and among the poor people. This last is my experience, but I have been able to elicit a negative history of the use of maize.

There is another theory that is contrary to the maize theory, but they

have not been able to establish their basis any more permanently than the maize theory.

Some, who are favorable to the maize theory, think that possibly it is due to a fungus found in the corn, others that it is a specific organism found in the maize. If an organism, it seems, thus far, to have never been isolated. Whatever the cause, it produces a toxin in the system which directly attacks the columns of the chord, especially the posterior and lateral. It also affects some of the large cells of the anterior cornua. It very much resembles Ataxic Paraplegia, yet differs in that it affects the lateral more than the posterior columns.

The cases, which it has been my good fortune to see, have been quite interesting to me, and, in brief, I will give the general symptoms which I found before giving the cases definitely.

When they entered the Hospital all were very much emaciated, showing a very great malnutrition. The general systemic conditions were below par. The mental condition of all was an agitated melancholia. They were considerably troubled and disturbed. Most of them had a very marked and persistent diarrhea. The stools were of a shiny, greenish color and very foul smelling. They moved from six to twenty-four times in twenty-four hours, usually considerable pain upon movement. Kidneys in just fair condition, usually a subnormal temperature in the morning, with a little rise in the afternoon. Pulse weak, and usually very rapid. Respiration slightly increased. The mucous membrane of the entire digestive tract somewhat inflamed. Appetite poor. Secretions of alimentary tract diminished. Blood anemic. Lesions of skin on dorsum of hands, lower portions of forearm, sometimes face, neck and ankles. I have been informed that in Porto Rico the book worm egg is always found in the faces. I have not demonstrated that fact yet.

Mr. K—— entered Hospital January 25, 1910:—Male; age twenty-seven years; born in Missouri; single; farmer; first attack eighteen years of age. In Hospital in Missouri three times and once in Hospital in Oklahoma before this time. Of a melancholic type, sometimes very much depressed and sometimes agitated. Complained of being constipated all the time, but was considerably emaciated. Majority of evidence proved that the constipation was delusional condition, and that the patient was having a diaorrhea. The latter part of September, 1910, this was proven to be the case and the typical skin lesions began to appear on the hands, face, neck and feet. He was placed on a rigid milk diet, given tonics, stimulants, intestinal antiseptics and astringents, but he gradually failed without rallying very much, and died October 23, 1910.

Mrs. D—— entered Hospital July 13, 1910:—Female; age thirty-six years; born in Alabama; mother born in South Carolina; occupation house and field work; one aunt insane; not very strong during life, some endometritis for several years. She was greatly emaciated and anemic when she entered. Dorsum of hands, feet, face and neck had characteristic skin lesions. Mental condition agitated melancholia. Upon physical examina-

tion the patellar reflexes were found to be increased; skin reflexes increased; heart increased and weakened action; persistent diarrhoea with very offensive stools; a great deal of mucous; tongue fiery red and furred; lungs normal except slightly increased action; liver and spleen slightly enlarged and tender on pressure; urine scant in amount and dark in color; considerable tenesmus on bowel movements; movements several times daily; subnormal morning temperature and slight rise in afternoon. Began treatment with cleaning out bowels, then astringent to check movement. Gave strichnine, quinine and iron. Placed upon almost exclusive milk diet, given every three or four hours during day. Local application for skin lesions. For a few days symptoms began to subside; mental condition improved; skin lesions began to clear up and diarrhoea began to check. This was only for a few days, however, when the symptoms began to aggravate again. Patient was placed in bed almost exclusively, and added to the former treatment an injection for bowel of opium and bismuth subnitrate. In a short time I checked my quinine and iron and placed her on a heavy arsenic treatment, with antiseptics for bowels. She rallied, and remained in very good condition for two or three weeks, then she began to fail and gradually got weaker until she died, October 30, 1910.

Mr. F—— entered Hospital August 25, 1910:—Male; age forty years; born in Georgia, father and mother born in South Carolina; single, laborer; strong until three years ago; alcoholic; possibly syphilitic; dilated left ventricle; he was much emaciated and very anemic when he entered. The dorsum of hands, feet, face and exposed portions of the neck presented the fiery red characteristic lesions of the skin in pellagra. The bowels were moving frequently and the odor was very offensive. The feces contained a great deal of mucous. Appetite very poor. The mucous membrane of entire digestive tract, according to appearances and symptoms, seemed to be in an inflamed and irritated condition. The mental condition was much disturbed. Physical examination showed the following: Deep patellar reflexes much increased; puillary reaction practically normal; skin reflexes increased; heart action weak; urine scant and very dark colored, otherwise practically normal; temperature subnormal in morning with a little evening rise; respiration slightly increased; tenderness in region of liver and spleen. Began treatment by cleansing bowels, then gave astringents to check same. Also placed him on a tonic treatment, a strictly milk diet and local applications for the hands. Bowels continued moving freely, so I began the use of injections of astringents to assist, if possible, to check bowels. The patient began to recuperate and symptoms began to subside. This continued for a few days and he began to feel very well. This lasted for a few days only, and symptoms began to aggravate again.

One noticeable thing in these cases is that the mental, skin and bowel symptoms work concomitantly.

The patient rallied several times, and then got worse; each time the change for the worse came, the symptoms were more aggravated and lasted a longer time, until November 1, 1910, he passed away.

In making a summary of these cases we find that there are three very

distinctive symptoms: Skin lesions, diarrhoea and mental condition. These three, as I have said, work in harmony. That is, all getting better or worse at the same time.

I am reporting these cases to show these distinctive symptoms. As I have said, I have obtained a negative history as regards the maize theory. These cases may be the exception rather than the rule. I am unable to say.

We have had two cases, besides these, in which the mental symptoms were predominant, the skin lesions were apparent, but the diarrhoea was not pronounced. These cases have recovered and returned to their homes, though I do not know how long to remain. There is a possibility of a return of the symptoms. These patients I placed on a daily saline, or oil for the bowels, with intestinal antiseptics and stimulative tonics. I did not try to check bowels. I treated them on the theory that there was a toxin in the system which was producing all the symptoms, and by elimination, stimulation and intestinal antiseptics, this toxin might be removed.

I have seen arsenic recommended, and have tried it some, but to no avail.

This is a new and large field for study, and my idea of presenting this paper was not to give a curative treatment for this disease, but to show you some of the results of my limited work along this line, and thereby bring up points for discussion by which we might be benefitted.

DISCUSSION.

Dr. Robinson, of Kansas City.

Mr. Chairman and Gentlemen:—I certainly enjoyed hearing this paper, and I think it is a good subject to discuss. A condition that is becoming so widely disseminated throughout our country with such a very unfavorable prognosis, I think I should be given the very closest attention by the medical profession. My personal experience with Pellagra has not been very encouraging from a theoretical standpoint. I have seen about a dozen cases. I have seen in the State Hospital at Nevada, Missouri, during the past two years about nine cases, practically all of these developed in the Institution. One was received in the institution with the symptoms of Pellagra. These patients I didn't treat, but the results were uniformly bad—they all died. The three cases that I have personally had under my care and treatment likewise died. The first case that I had was a Greek, a laborer on a railroad in Kansas, and had been in this country for some five years. He hadn't been eating largely of corn bread but had been eating largely of food made from corn. The skin lesions on this patient was decidedly marked. At the time he came under my observation the dermatitis was limited to the hands and lower part of the forearms and the back of the neck and face. Later he developed a general dermatitis. He had the melancholia, and his symptoms were largely those of mental depression. He unfortunately died of anemia after some three or four weeks and we had an autopsy, and we found a general congested condition of every part of the body nearly, especially was this true of the brain.

A case that came under my observation was a woman who was Ameri-

can and Indian; she was born in Missouri, had been in several of the Southern States and came directly from Oklahoma City. She had been living in the outskirts of Oklahoma City in rather a poor locality there, and she gave a history of having eaten largely of canned goods that had been cast aside after the burning of a wholesale grocery store; some canned goods were thrown out after this fire and she and her neighbors had picked them up and eaten them. When she came under my observation her symptoms, skin lesions, were very typical, covering the forearms and back of the hands. She had marked mental depression. She also had the laudanum habit, and as soon as she took that she had no diaorrhea, and her mental symptoms I say were largely those of mental irritation, with some depression. She lived some weeks and died of exhaustion. We had an autopsy on her and found a general congestion of the tissues of the body.

The other case was the most interesting of the three, for the reason that the mental symptoms were more marked. I recently had her in my care, and all the dermatitis she had was limited to the back of the hands and lower part of the fore arms. She gave a history of some two years of diaorrhea with mental depression. She was under my care for about six weeks. The disenteric symptoms were better and worse. She had that for about two years, got better and got worse. And we put her on a milk diet, an enormous quantity of milk, several quarts a day, and attempted to control her symptoms in that manner. I also gave her the 606, which has been recently recommended by some Southern physicians as giving very good results in some of these cases. Her mental symptoms were those of mental excitation, mental confusion or depression. She was unable to stand alone when she came under my observation. The odor from her diaorrhea was the most foul of any I have ever seen, and under any treatment I was able to give her, she gradually lost ground and finally died of exhaustion. Prior to her death she developed some tenderness. I was not able to get an autopsy in her case.

Now on the first case I gave arsenic internally, and the second case and the third case I gave 606, so it proved to me arsenic was not a cure. We put her on the milk diet, and some Southern writers have said to give a large quantity of milk daily, forcing all the milk you can possibly get into your patient will give results. In this case it didn't. I recently read a report of some cases of some Southern writers in the American Journal of Medical Sciences concerning the use of 606; these men had used it on several cases with marked results. In my case it didn't give any good results; I didn't use it in time or didn't use enough. I gave only one injection. The symptoms got so bad I didn't feel like giving any more.

Now I sincerely hope some men will discover some specific treatment for Pellagra. It is invading the State of Missouri, and I understand is in this state. It has been very largely present in Illinois, especially in the institutions especially among the chronic insane. Dr. Zeller told me about a year ago over at Peoria, that he had lost 90 cases in the year previous with Pellagra in his institution. Of course at that time he was Superintendent for the State Hospital for the Incurables. The patients had all been in the institu-

tion for a long, long time. And whether or not corn is the cause, and whether or not some other form of eatable poison is the cause, or what not, we do know that it produces bad results, and that the termination is extremely bad. The autopsy has demonstrated to me that it not only involves the skin and the brain and the cord, but it involves almost every part of the body, especially in the liver, at least in those two cases on which we had an autopsy.

Dr. E. S. Lain, of Oklahoma City:

I enjoyed Dr. Erwin's paper very much, which he has gotten up so accurately, according to my observation. * * * * * I have not been permitted to follow but few of these cases entirely through the trouble except, indirectly not being connected with any institution, or having any place in Oklahoma City where we can accept those cases, I don't get to follow them. They skip out; I had one last year under my care after a couple of weeks, and thought he was improving and the next day he was gone, and I found out he had bought a ticket for Wichita. I had several other cases I waited on for awhile, and of course I couldn't promise them much, and the first thing their friends had them under somebody else's care, or gone from the country. We can't hold these cases unless we have an institution, therefore we are handicapped, those of us situated as myself. There is one feature, however, that I think a little more stress might be laid upon which would aid us in diagnosing the skin lesions. The skin lesions of Pellagra is distinct from all other lesions, so that I believe a close observing man is hardly excusable for making a mistake upon the skin lesions of Pellagra and that of other trouble, provided he has given any attention to skin lesions in general. The color is so pronounced after it is once well developed, as described by some writer, I do not remember at this time who it was, but he says it is like unto the carbolic acid burn. That describes it exactly. First the line of demarkation is just a distinct line, usually about the wrist band, but not always at this place. My observation is it begins the most frequently between the neck and extending up to perhaps the lips and then the face and neck. This color, I say, is that of carbolic acid burn. It is a deep exfoliation. It is almost soft and tender for a few days, sometimes it vanishes and in the course of two or three weeks we have another; sometimes within eight days. Regarding the treatment, I think we have much to learn and to investigate along this line, but just now I must confess that I am a little much more encouraged since we are getting better drugs in arsenic. I haven't succeeded in accomplishing any good results with the ordinary demonstration of arsenic, until recently we have had one case which we have used the arsenobenzold, in fact, it is under our care at the present time. We have him confined, a patient sent to us from Anadarko. This case is running a temperature, I believe, that wasn't mentioned except by the writer, and some cases my observation has been, run a temperature at some period during the 24 hours, it may be in the afternoon or forenoon; one or two cases I have seen it is the morning rise and in the evening subside. This case had the afternoon rise, as the writer has mentioned was common. The pulse is very character-

istic, as it is said, in this case the pulse is running 140, the temperature rise usually from 99 to 101, in this case it is 100 to 100.2-5. We tried the ordinary treatments for a few days until we were positive of our diagnosis, then we gave him the arsenobenzol. The fourth day after we gave him this preparation his temperature had dropped almost normal; the fifth day the temperature subnormal in the afternoon, the pulse dropped the fourth day from 140 to 116, and by the sixth day the pulse was 98. At the present time, about a week since we begin, the skin lesions are clearing rapidly. The gastro intestinal symptoms which were extreme in this case, I should have said so much so he couldn't masticate solid food. The mouth began clearing about the fifth day and by the seventh day almost entirely cleared. The number of discharges first was from five to seven a day, by the sixth day the bowel action has decreased to three, at the present time it is one to two. I have never seen such rapid improvement under one treatment. As we all know it is rapid improvement in most cases, however, we are learning since that one dose don't do all the work. We have to repeat in our syphilitic cases, and I expect we will have to repeat in our Pellagra cases. And I believe from the records I have been reading that we can reasonably expect to get rapid improvement of the symptoms in perhaps 50 or 60 per cent of the present cases. I believe at the present time so much cannot be said of any other treatment. However it yet remains for us to continue our investigation, and especially do I believe we should investigate with the microscope because it behaves in many respects like it might be———. I don't know when I have given so much thought to one disease as I have to this recently, and I mean to continue and try, if possible, to at least operate with others that found, or think that they have found it in these cases, and if possible try to isolate some particular organism.

Dr. Erwin:

I certainly appreciate what the doctors have said in regard to the matter. It is interesting to me, and I think I have gotten a few points that will be a help in my work along this line.

OKLAHOMA STATE MEDICAL ASSOCIATION.

Muskogee, Oklahoma, May 11, 1911.

The House of Delegates of the Oklahoma State Medical Association was called to order by President David A. Myers at nine A. M. on the morning of May 11th, 1911.

The roll call of the House was taken by counties, after which motion was made and carried that the report of the Credential Committee be adopted.

Ruling made by Chair that all delegates appointed shall serve throughout this session.

Motion made and carried that nominating speeches be limited to two minutes.

The House then proceeded to election of officers, beginning with President.

Motion made and carried that after first complimentary ballot, all names except the three obtaining the highest number of votes be dropped from the list. Tellers were appointed to collect the ballots. (Drs. Barnes, Ney Neel and W. T. Tilly).

Dr. Charles L. Reeder received the highest number of votes, and was declared unanimously elected to be President of the Association for the ensuing year.

Doctor Reeder came forward at request of the retiring president and gracefully acknowledged the honor conferred upon him.

The House was then instructed by President Myers that in voting for Vice-President, each member should vote for but one man, and the three men receiving the highest number of votes would be the First, Second and Third Vice-Presidents. Vote resulted as follows:

Dr. James L. Shuler of Durant, First Vice-President.

Dr. J. W. Duke, Guthrie, Second Vice-President.

Dr. H. M. Williams, Wellston, Third Vice-President.

The next order of business for the House of Delegates was the election of a Secretary-Treasurer for the ensuing year. With this end in view, motion was made and carried that the present Secretary be declared unanimously elected to succeed himself. This method of election was declared unconstitutional and the vote of the society was taken for Secretary with the result that Dr. Claude F. Thompson was unanimously elected to fill the office of Secretary-Treasurer for another term.

Vacancies having occurred in the Second, Sixth, Seventh and Tenth Councillor Districts, the following selections were made:

Second District—R. V. Smith, Guthrie.

Sixth District—L. T. Strother, Nowata.

Seventh District—P. P. Nesbitt, Muskogee.

Tenth District—H. L. Wright, Hugo.

Motion made and carried that resolution as offered by Doctor Duke be adopted.

Copy of Resolution.

Resolution offered at the Tulsa meeting May 12, 1910, to lie over one year and if adopted to become a part of the Constitution and By-Laws:

Amendment to Section Three (3), Chapter Five (5), By-Laws:

Resolved, That there shall be appointed by the President within thirty days after each annual meeting a Legislative Committee of three members, one to be a resident of the Capitol, and one member to serve one year, one to serve two years, one to serve three years, and one to be appointed annually hereafter by the President; the President and Secretary to be ex-officio members of the Committee.

The following delegates to the A. M. A. were elected:

Dr. W. E. Wright; years 1911 and 1912.

Dr. J. A. Walker, to serve one year only, 1911.

Dr. E. S. Lain, to serve 1912-1913.

The next thing on the program was the report from the Resolutions Committee. The following resolutions were introduced and, by motion, adopted as read:

1. Resolution providing for the establishment of a State institution for the indigent sick.

2. Resolution providing for the establishment and maintenance of a State institution for the treatment of tubercular citizens.

3. Resolution extending thanks to Miss Kate Barnard for the assurance of the help of her department in an endeavor to better the physical and moral condition of her people.

4. Report on Neerology.

5. Resolution of Association to extend thanks to City of Muskogee and the Commercial Club for generous entertainment provided.

6. Resolution extending thanks to physicians of the Muskogee County Medical Society for efforts of said Society to make visit pleasant and profitable.

7. Resolution extending an expression of appreciation to the ladies of Muskogee who had done so much to make visit of the wives of the physicians a profitable and pleasurable one.

8. Resolution extending thanks to Mr. W. F. Moffatt, President of Automobile Club, for drive over the City.

9. Resolution of thanks to Miss Alice Robertson for entertainment provided Ladies' Auxiliary.

Committee on Resolutions,

A. B. LEEDS,

C. M. MAUPIN,

JAMES L. SHULER.

A report from the Council was then heard which made a showing of the financial condition of the Society, there being on hand \$3,196.18.

A few words of farewell and of explanation were made by Doctor Tilly, President of the outgoing Board of Medical Examiners.

Shawnee was chosen as the place for the next annual meeting of the Association, invitation having been presented by Dr. J. A. Walker.

Announcement was then made concerning the meeting of the Medical Association of the Southwest which is to convene in Oklahoma City, October 9th, 10th and 11th.

The newly-elected President, Doctor Reeder, here took the Chair and presided until the close of the meeting.

Dr. Edwin DeBarr, State Chemist, was allowed the privileges of the floor at this point, and gave a very interesting talk concerning method of sending water to be examined, to the State Laboratories, urging upon the doctors present the necessity of using the vehicles provided by the State for that purpose.

Doctor DeBarr also gave a graphic description of the ways in which water became infected with typhoid germs, and of the long time those germs might lie undiscovered.

There being no further business, the Society adjourned sine die.

Immediately after the adjournment above, the members gathered in scientific session to finish the program under Gynecology and General Medicine.

Dr. John F. Kuhn of Oklahoma City was appointed Chairman of the section of Gynecology and Obstetrics.

Dr. J. A. Hatchett, El Reno, was made Chairman of the section on General Medicine.

Motion to adjourn made and carried.

TEXT OF RESOLUTIONS ADOPTED.

Proceedings of the House of Delegates, Convened in Leighton Building,
Muskogee, Oklahoma, May Eleventh, 1911, at Nine A. M.

Whereas, there exists an imperative need for an institution of state-wide importance for the proper medical treatment of the indigent sick, thus relieving the various counties of a condition many of them are unable to meet, and at the same time affording the most advanced facilities for this work,

BE IT RESOLVED, that the State Medical Association of Oklahoma hereby endorses the establishment and maintenance of a state institution for the treatment of the indigent sick, said institution to be conducted in connection with the State Medical College.

Whereas, the prevalence of tuberculosis in the State of Oklahoma is such as to be a menace to public health in general, and whereas few communities have available means of giving treatment to its indigent tubercular citizens, and whereas it has been ascertained that a majority of those who are suffering from tuberculosis in this state are unable to care for themselves, thus endangering others to a greater extent than would exist were they financially able to enjoy the precautions and treatment necessary in combatting this disease,

BE IT RESOLVED, that the State Medical Association of Oklahoma approve the plan of the State establishing and maintaining a proper sanitarium for the treatment of tubercular citizens, to be centrally located, and that this Association do respectfully urge the legislative department of the State Government to create such an institution at its earliest opportunity.

REPORT OF COMMITTEE ON NECROLOGY.

TO THE OKLAHOMA STATE MEDICAL ASSOCIATION:

Your Committee on Necrology regret to report that since our last annual meeting the following members have been called to the Great Beyond:

Dr. W. H. Clutter, Oklahoma City.

Dr. A. M. Clinkscales, Vinita.

Dr. W. C. Fulkerson, Marshall.

We recommend that the Secretary make suitable entry of their death on the minutes of this Association.

EDITORIAL

THE MUSKOGEE MEETING.

This meeting will have the enviable distinction of going on record as the best from the viewpoint of scientific work that the Association has yet enjoyed.

The meeting started off under the direction of President Myers exactly on scheduled time and each section meeting thereafter held was called to order at the appointed time under the respective Chairman and the programs carried out with proper precision. No one present went away with the complaint that he was unable to read his paper, and several of our friends from other States were present and helped to make the meeting a success with their contributions.

The House of Delegates was notably free from useless discussion and the injection of irrelevant issues. Much of the bitterness that has characterized some of our meetings in the past was laid on the shelf and the time of the meeting given up to its legitimate object.

May we hope that this system will continue forever and a day.

OUR EXHIBITORS.

One of the pleasures of the meeting in Muskogee was the presence of a goodly number of exhibitors, who took advantage of the occasion to meet their patrons and display their wares.

Among those represented were: Hettinger Brothers, Kansas City; Sharp & Smith, Chicago; Max Woche & Son, Cincinnati; C. V. Mosby Medical Book Company, St. Louis; The Moore Drug Company, Kansas City; H. K. Mulford Company, Philadelphia.

BOOK REVIEWS

DISEASES OF THE SKIN.

NEW (SIXTH) EDITION, REVISED.

A Treatise on Diseases of the Skin. For the use of advanced Students and Practitioners. By Henry W. Stelwagon, M. D., Ph. D., Professor of Dermatology, Jefferson Medical College, Philadelphia. Sixth edition, revised. Handsome octavo of 1195 pages, with 289 text-illustrations, and 34 full-page colored and half-tone plates. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$6 net; Half Morocco, \$7.50 net.

That this work has reached the sixth edition testifies its popularity with the medical profession and so well known is the work throughout the medical world that commendation of it seems unnecessary. Its immense scope may be judged by its size and a glance at its contents acquaints the reader with the fact that it has been brought up to date. There is space devoted to all the newer affections, the amount depending on their importance and present knowledge of the affection.

The work is most liberally illustrated, many of the cuts being in color.

It will be received by the profession with the same popularity as its predecessors.

BOOKS RECEIVED

PRACTICAL MEDICINE SERIES, GENERAL SURGERY.

Volume Two, edited by John B. Murphy, A. M., M. D., L. L. D. Professor of Surgery in the Northwestern University, Attending Surgeon and Chief of Staff of Mercy Hospital, Wesley Hospital, St. Joseph's Hospital and Columbus Hospital, Consulting Surgeon to Cook County Hospital and Alexian Brothers Hospital, Chicago.

SERIES 1911

Bound in Cloth, Price \$2, Price of Set of Ten Volumes issued during the year \$10, Chicago, THE YEAR BOOK PUBLISHERS, 180 North Dearborn Street.

This is an up-to-the-minute review of the surgical world and its transactions, opinions and writings and gives one an accessible volume of the latest technique. As a ready work of reference it is a necessity to the busy general practitioner.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR.

New Second Addition.

A Manual of Diseases of the Nose, Throat and Ear. By E. Baldwin Gleason, M. D., Professor of Otology at the Medico-Chirurgical College, Philadelphia. Second revised edition. 12mo of 563 pages, profusely illustrated. Philadelphia and London, W. B. Saunders Company, 1900. Flexible leather, \$2.50 net.

This is a most useful little volume intended for the use of students and general practitioners. To the latter it will be found of great service on account of its convenient size and the many explanations on examination, diagnosis and treatment contained. The illustrations are clear and practical and the preparation of the office equipment and arrangement, with succinct descriptions on the use of the necessary instruments is worthy of consideration.

A phase of very practical use is that devoting many pages to formulæ and their preparation and the preparation of solutions generally used in office work.

The volume may be safely commended to the investigation of the general practitioner who is concerned with the subject of diseases of the ear, nose and throat.

MISCELLANEOUS

THE BUGBEAR OF "INDIGESTION."

"It is often said that ours is a 'a nation of dyspeptics.' Medical men appreciate how apt this statement is, and never was there a time when it was more true. Only yesterday one of them remarked, with a touch of humor, that 'people are living so fast today that they do not stop to masticate their food'—a wise observation, we must admit.

"And besides—in the matter of eating have we not as a race departed

from the so-termed simple life? Have we not in more than one way become denatured rather than civilized? It seems that the things people eat today are censored to tickle the palate, rather than nourish and upbuild the body, and the consequence of such pleasurable and improper eating is a disordered stomach."—From Brochure on Taka-Diastase.

One is tempted to quote further from this booklet, so interesting is the story—in subject-matter and in the manner of its telling. To do so, though, were to defeat the present writer's object, which is to insure a wider audience for the booklet itself—a booklet which is well worth having, whether or not one expects to avail himself of its therapeutic suggestions.

As the quoted paragraph attests, the brochure is well written. Its literary flavor, however, is but half its charm. In its physical make-up the booklet is a distinct novelty, its quaint cover design, its fitting inner embellishments, and its oriental suggestiveness lifting it well out of the casual and commonplace.

The brochure tells how Take-Diastase came to be—tells how it is made, and in the language of the distinguished chemist and scientist who evolved and gave to the world this valuable ferment. It explains, in attractive, readable form, how Taka-Diastase acts in defective starch-digestion, in gastritis, in diarrhoea and constipation, in wasting diseases, and in the diet of infants. It contains a full list of Taka-Diastase products and gives hints as to dosage. Altogether it is an important little work, and one that readers of the Journal of the Oklahoma State Medical Association are advised to send for. A copy may be obtained by any physician by addressing a request of the "Taka-Diastase Brochure" to the publishers, Parke, Davis & Co., at their home offices in Detroit, providing, of course, the edition has not previously been exhausted.

FOR SUMMER HEALTH.

When the hot, sultry summer time comes and you're about played out, feeling tired and miserable from heat and excessive perspiration, get a box of Tyree's Antiseptic Powder and use in the bath as directed. It will refresh and revive you, eliminating all bodily odors and is especially good for sore, tired, sweaty feet. A valuable booklet entitled "The Nurse" and a liberal, free sample of Tyree's Antiseptic Powder can be had by addressing J. S. Tyree, Washington, D. C. This antiseptic Powder also relieves insect bites, sunburn, hives, poison oak and skin diseases. For sale at drug stores in 25c and \$1.00 boxes, or sent direct upon receipt of price.

FOR SALE

A first-class country practice, last year over \$3,000 cash. Will sell cheap. Reason, moving to Muskogee. Write for full information. Dr. L. F. FLAMM, Boynton, Oklahoma.

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President.....Dr. C. L. Reeder, Tulsa
 quest for the "Taka-Diastase Brochure" to the publishers, of course, the
 edition has not previously been exhausted.

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J. A. Walker, Shawnee, 1911; Dr. E. S. Lain, Oklahoma City, 1912-1913
 Member National Legislative Council, A. M. A.....To Be Appointed

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Next meeting, Ione Hotel, Guthrie, Okla., beginning July 11th. Address all communications to the Secretary.

ROSTER OF MEMBERS OF OKLAHOMA STATE MEDICAL ASSOCIATION.

Corrected up to May 22, 1911

ADAIR COUNTY

Barnes, C. C.	Westville	Robinson, C. M.	Stilwell
Beard, D. A.	Westville	Robinson, J. A.	Dutch Mills, Ark.
Collins, B. F.	Stilwell	Williams, T. S.	Stilwell
Lane, J. N.	Westville	Woodruff, P. C.	Stilwell

ALFALFA COUNTY

Bird, John T.	Ingersoll	Reichley, E. J.	Lambert
Clark, Z. J.	Cherokee	Slaton, F. K.	Goltry
Medaris, J. H.	Helena	Sweeney, A. R.	Carmen

ATOKA-COAL COUNTY

Cates, Albert	Tupelo	Logan, W. A.	Lehigh
Clark, J. B.	Coalgate	McCarley, T. H.	Atoka
Connors, L. A.	Coalgate	Stiewig, J. R.	Tushka
Fulton, J. S.	Atoka	Taylor, E. F.	Clarita
Gardner, C. C.	Atoka	Wallace, W. B.	Lehigh
Goben, H. G.	Lehigh	Willour, L. S.	Atoka

BECKHAM COUNTY

Baker, J. C.	Sayre	Pinnell, G.	Erick
Ballard, J. D.	Oklahoma City	Speed, H. K.	Sayre
Gipson, H. H.	Erick	Stockes, S. S.	Erick
Johnson, T. E.	Elk City	Standifer, J. E.	Elk City
Law, A. G.	Elk City	Tedrowe, C. W.	Elk City
McComas, J. M.	Elk City	Warford, J. D.	Erick
McCreery, R. C.	Erick	Wells, T. J.	Erick

BLAINE COUNTY

Blender, H.	Okeene	Murdoch, L. H.	Okeene
Browning, J. W.	Geary	Smith, I. T.	Fay
Buchanan, M. W.	Watonga	Stough, D. F.	Geary
Campbell, J. L.	Watonga	Tracy, C. M.	Canton
Doty, H. W.	Homestead		

BRYAN COUNTY

Allen, J. R.	Caddo	Kendall, W. L.	Oklahoma City
Armstrong, D.	Mead	Lively, C. O.	Kemp
Austin, J. L.	Durant	Park, J. F.	Durant
Bradley, A. J.	Albany	Rappolee, H. E.	Caddo
Cain, P. L.	Albany	Rushing, G. M.	Durant
Durham, J. H.	Durant	Smith, J. B.	Durant
Fuston, H. B.	Blue	Shuler, J. L.	Durant
Grassham, R. H.	Caddo		

CADDO COUNTY

Anderson, P. H.	Anadarko	McCray, O. D.	Anadarko
Blair, S.	Apache	Putman, Wm. B.	Alfalfa
Bird, Jesse	Apache	Rector, R. D.	Anadarko
Boyd, D. H.	Cement	Russell, P. L.	Anadarko
Booth, Wm. E.	Anadarko	Sanders, P. L.	Carnegie
Brown, B. D.	Apache	Hume, Chas. R.	Anadarko
Campbell, Bertha H.	Anadarko	Kerley, W. W.	Anadarko
Campbell, Geo. W.	Anadarko	Lane, C. W.	Miles, Wash.
Colby, Geo. B.	Gracemont	McClure, P. L.	Fort Cobb
Dail, A. W.	Cement	Shadid, M.	Stecker
Dinkler, F.	Fort Cobb	Weiser, D. D.	Alden
Downs, Edw. W.	Hinton	Westermeir, Geo. W.	Anadarko
Edens, M. H.	Verden	White, D. O.	Eakley
Gill, W. W.	Gracemont	Willard, A. J.	Cyril

CANADIAN COUNTY

Aderhold, T. M.	El Reno	Muzzy, W. J.	El Reno
Arnold, O. D.	El Reno	Miller, W. R.	Calumet
Brown, H. C.	Okarche	Richardson, D. P.	Union City
Clark, F. H.	El Reno	Riley, J. T.	El Reno
Dever, H. A.	El Reno	Ruhl, N. E.	Piedmont
Fitzgerald, M.	El Reno	Runkle, R. E.	El Reno
Hatcher, A. D.	El Reno	Sanger, S. S.	Yukon
Hatchett, J. A.	El Reno	Taylor, G. W.	El Reno
Koons, R. F.	El Reno	Wolffe, L. G.	Okarche
Lynde, L. W.	Okarche		

CARTER COUNTY

Amerson, G. W.	Milo	Hathaway, W. G.	Pooleville
Ballard, A. E.	Lone Grove	Hardy, Walter	Ardmore
Boardway, F. W.	Ardmore	Hargrove, W. G.	Ardmore
Bogie, W. T.	Ardmore	Henry, R. H.	Ardmore
Booth, J. E.	Connerville	Higgins, H. A.	Springer
Booth, T. S.	Ardmore	Moore, R. D.	Ardmore
Clarke, C. B.	Ardmore	McNees, H. C.	Ardmore
Cox, J. L.	Ardmore	Sullivan, C. F.	Lone Grove
Davis, A. B.	Wheeler	Taylor, Don	Woodford
Davis, R. P.	Keller	Von Keller, F. P.	Ardmore
Denham, T. N.	Hoxear	Whitfield, James	Berwyn
Gillispie, L. D.	Springer	Willard, R. S.	Ardmore
Goodwin, G. W.	Ardmore	Smith, J. H.	Healdton

CHEROKEE COUNTY

Allison, J. P.	Tahlequah	Duckworth, J. F.	Tahlequah
Allison, T. P.	Tahlequah	Hill, Israel	Peggs
Bewely, J. D.	Peggs	McCurry, L. E.	Tahlequah
Blake, Ed W.	Tahlequah	Peterson, C. A.	Tahlequah
Blake, W. G.	Tahlequah	Reece, Isaac	Manard
Dement, J. L.	Tahlequah	Thompson, J. M.	Tahlequah

CHOCTAW COUNTY

Barnett, W. F.....	Ft. Towson	Moore, J. D.....	Sawyer
Gee, R. L.....	Ft. Towson	Swearingen, C. H.....	Hugo
Gregsby, R. A.....	Ft. Towson	Vick, J. T.....	Ft. Towson
John, W. N.....	Hugo	Wright, H. L.....	Hugo

CLEVELAND COUNTY

Blachly, C. D.....	Norman	Erwin, F. B.....	Norman
Bobo, C. S.....	Norman	Griffin, D. W.....	Norman
Capshaw, Walter.....	Norman	Hirshfield, Albert C.....	Norman
Capshaw, M. T. J.....	Norman	Hoshall, J. L.....	Franklin
Childs, Henry C.....	Noble	Lowther, Robert D.....	Norman
Davis, James A.....	Norman	Thacker, Robert E.....	Lexington

COMANCHE COUNTY

Angus, H. A.....	Lawton	Lewis, J. L.....	Lawton
Barnwell, J. T.....	Graham	McCallum, C.....	Randalett
Bolton, W. D.....	Clinton	McGee, J. P.....	Fletcher
Brashear, Jackson.....	Lawton	Mead, W. B.....	Lawton
Bugress, W. C.....	Emerson	Meeker, E. D.....	Lawton
Clark, M. T.....	Temple	Milne, L. A.....	Lawton
Dunlap, P. G.....	Lawton	Mitchell, E. B.....	Lawton
Dunlap, E. B.....	Lawton	Mullinex, C. S.....	Devol
Gamble, J. T.....	Elgin	Myers, D. A.....	Lawton
Gipson, T. J.....	Lawton	Sanders, M. J.....	Randalett
Gooch, L. T.....	Lawton	Stewart, A. R.....	Lawton
Griffith, J. K.....	Tishimingo	Webb, G. O.....	Temple
Harned, W. B.....	Chattanooga	Winn, H. M.....	Sterling
House, C. F.....	Hastings	Young, J. W.....	Lawton
Knee, L. C.....	Lawton		

CRAIG COUNTY

Adams, F. M.....	Big Cabin	Neer, C. S.....	Vinita
Bagby, Louis.....	Vinita	Robinson, F. L.....	Blue Jacket
Craig, J. W.....	Vinita	Staples, J. H. L.....	Blue Jacket
Hughson, F. J.....	Vinita	Stough, D. B.....	Vinita
Herron, A. W.....	Vinita	Wollard, Frank.....	Welch

CREEK COUNTY

Bone, J. W.....	Sapulpa	Longmeyer, W. P.....	Sapulpa
Briney, H. W.....	Bristow	McAlester, Jas.....	Sapulpa
Bronaugh, J. W.....	Mounds	McCoy, M. L.....	Bristow
Chaney, J. C.....	Sapulpa	McCallum, C. L.....	Sapulpa
Coppedge, O. S.....	Depew	Reynolds, V. M.....	Bristow
Coppedge, O. C.....	Bristow	Rhodes, R. L.....	Mounds
Croston, G. C.....	Sapulpa	Rutherford, Lafe.....	Sapulpa
Fry, Melvin.....	Sapulpa	Sole, J. R.....	Kiefer
Groom, W. W.....	Bristow	Schrader, T. C.....	Bristow
Garland, H. S.....	Sapulpa	Sweeney, R. M.....	Sapulpa
Hoover, J. W.....	Sapulpa	Stafford, G. A.....	Kiefer
Justice, H. B.....	Sapulpa	Schwab, B. C.....	Sapulpa
King, E. W.....	Bristow	Taylor, Z. G.....	Mounds

Livermore, W. H.....	Chickasha	Stinson, J. E.....	Chickasha
Marrs, S. O.....	Chickasha	Thraillkill, G. H.....	Chickasha
Padberg, J. W.....	Ninnekah	Tye, R. P.....	Chickasha
Penquite, W.....	Chickasha	Vann, Paul D.....	Chickasha
Peters, Wm. L.....	Oklahoma City	Hendrix, H. B.....	Chickasha
Russell, W. B.....	Chickasha	White, A. C.....	Chickasha

GRANT COUNTY

Hulen, F. P.....	Pond Creek	Hulen, C. R.....	Pond Creek
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GREER COUNTY

Anderson, C. C.....	Gould	Hopkins, S. W.....	Hollis
Austin, C. W.....	Granite	Jeter, O. R.....	Reed
Barr, J. H.....	Reed	Jones, J. E.....	Hollis
Brace, A. J.....	Hester	Lindley, H.....	Hollis
Buckman, J. I.....	Brickman	McFadden, J. S.....	Hollis
Bray, G. T.....	Vinson	Merideth, J. S.....	Russell
Campbell, J. F.....	Mangum	Neel, Ney.....	Mangum
Capps, J. D.....	Granite	Norton, Porter.....	Mangum
Collett, E. D.....	Mangum	Pendergraft, W. C.....	Hollis
DeArmen, M. M.....	Mangum	Scarbrough, W.....	Mangum
Dodson, T. J.....	Mangum	Street, O. J.....	Louis
Dodson, W. O.....	Willow	Willis, T. L.....	Granite
Enlow, A. J.....	Hollis		

HASKELL COUNTY

Callaway, A. B.....	Stigler	Jones, O. H.....	Kenama
Chambers, A. M.....	McCurtain	Jones, R. E.....	LeQuire
Davis, Ben.....	Kinta	McClure, B. T.....	McCurtain
Fannin, F. A.....	Stigler	Mitchell, S. E.....	Stigler
Henderson, C. F.....	McCurtain	Turner, T. B.....	Stigler
Hill, A. T.....	Tamaha	Turner, C. A.....	Garland

HUGHES COUNTY

Adams, A. C.....	Lamar	Martin, C. C.....	Raydon
Adkins, W. D.....	Holdenville	Melette, U. N.....	Holdenville
Bentley, J. A.....	Stuart	Mitchell, P. E.....	Yeager
Bentley, W. B.....	Calvin	Pope, A. J.....	Hanna
Berninger, W. B.....	Allen	Rose, J. C.....	Allen
Butts, A. M.....	Holdenville	Robertson, I. W.....	Dustin
Cagle, T. J.....	Wetunka	Scott, J. D.....	Holdenville
Howell, H. A.....	Holdenville	Tribble, E. T.....	Yeager
Davenport, A. L.....	Holdenville	Weeden, J. A.....	Sasakwa
Johnson, N. J.....	Newburg	Wallace, C. S.....	Dustin

JACKSON COUNTY

Clarkson, W. H.....	Blair	Hankins, L. A.....	Altus
Fox, Raymond H.....	Altus	Landrum, S. H.....	Altus

Rawls, S. P.....	Altus	Sanderson, W. E.....	Altus
Spears, C. G.....	Altus	Wilson, D. E.....	Elmer
Strother, S. P.....	Altus		

JEFFERSON COUNTY

Ashinhurst, T. E.....	Waurika	Moore, J. W.....	Addington
Browning, W. M.....	Hastings	Nunn, W. T.....	Petersburg
Cantrell, D.....	Waurika	Stephens, J. M.....	Hastings
Deer, J. I.....	Waurika	Walker, J. A.....	Fleetwood
Ewing, F. W.....	Terral	Wilton, G. C.....	Ryan
Lewis, A. R.....	Ryan	Murphy, Geo. W.....	Addington
Maupin, C. M.....	Waurika		

JOHNSON COUNTY

Looney, B. R.....	Mill Creek	Reeves, W. B.....	Wapanucka
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KAY COUNTY

Bishop, H. H.....	Tonkawa	Waggoner, R. E.....	Ponca City
Jones, J. S.....	Tonkawa	Waggoner, E. E.....	Tonkawa
Robertson, W. A. T.....	Ponca City	Risser, A. S.....	Blackwell
Stricklen, H. M.....	Tonkawa		

KINGFISHER COUNTY

Cavett, R. E.....	Keil	Gose, C. O.....	Hennessey
Cullum, A. B.....	Hennessey	Overstreet, J. A.....	Kingfisher
Fisk, C. W.....	Kingfisher	Rector, Newton.....	Hennessey
Gore, V. M.....	Kingfisher		

KIOWA COUNTY

Barkley, A.....	Hobart	Miller, W. W.....	Gotebo
Chambers, M. E.....	Gotebo	Muller, J. A.....	Snyder
Dale, J. R.....	Hobart	Ritter, J. M.....	Mondamin
Holland, A. W.....	Hobart	Stewart, G. W.....	Hobart
Huffman, L. H.....	Hobart	Wagoner, A. L.....	Hobart
Hathaway, A. H.....	Mt. View	Bonham, J. M.....	Hobart
Lloyd, H. C.....	Hobart		

LATIMER COUNTY

Brooks, E. J.....	Lutie	Kilpatrick, Garnet A.....	Wilburton
Dalby, H. L.....	Wilburton	McArthur, J. F.....	Wilburton
Evans, E. L.....	Wilburton	Munn, J. A.....	Wilburton
Horine, W. H.....	Wilburton	Rich, R. L.....	Red Oak
Kilpatrick, Geo. A.....	Wilburton	Talley, I. C.....	Red Oak

LEFLORE COUNTY

Brown, W. W.....	Cameron	Hardy, J. J.....	Poteau
Booth, G. R.....	Leflore	Hardy, H.....	Kokoshe
Collins, E. L.....	Panama	Morrison, Geo. A.....	Poteau
Dean, S. C.....	Howe	Morrison, R. L.....	Poteau
Hartshorne, W. O.....	Spiro	Minor, S. W.....	Williams

Moore, M. O.....	Braden	Riggan, C. E.....	Monroe
Mixon, A. M.....	Spiro	Sommerville, J. N.....	Howe
Plumlee, M.....	Poteau	Woodson, B. D.....	Monroe
Stuart, W. A.....	Heavener	Mahov, C. H.....	Spiro
Shippley, E. E.....	Wister		

LINCOLN COUNTY

Adams, J. W.....	Chandler	Hurlburt, E. F.....	Chandler
Bilby, J. F.....	Stroud	Iles, H. C.....	Prague
Brown, R. A.....	Prague	Marshall, A. M.....	Chandler
Davis, S. O.....	Chandler	Morgan, C. M.....	Chandler
Davis, W. H.....	Chandler	Narwood, T. H.....	Prague
Erwin, P. F.....	Wellston	Williams, H. M.....	Wellston

LOGAN COUNTY

Barker, E. O.....	Guthrie	Overton, L. M.....	Guthrie
Bowers, W. B.....	Guthrie	Petty, C. S.....	Guthrie
Childers, A. G.....	Mulhall	Phillips, Lewis.....	Seward
Duke, J. W.....	Guthrie	Simmons, C. D.....	Orlando
Day, Lewis.....	Pleasant Valley	Smith, R. V.....	Guthrie
Hahn, L. A.....	Guthrie	Stevens, David.....	Guthrie
Hill, C. B.....	Guthrie	Rucks, W. W.....	Guthrie
Hamill, J. R.....	Guthrie	Rhinehart, J. H.....	Meridias
Hudson, B. F.....	Morris, Ill.	Underwood, E. L.....	Crescent
Herriman, L. L.....	Guthrie	Wachtel, J. B.....	Navina
Melvin, Elizabeth.....	Guthrie	Cotteral, C. F.....	Guthrie
Melvin, J. L.....	Guthrie		

LOVE COUNTY

Antry, D.....	Marietta	Jackson, T. J.....	Marsden
Batson, W. V.....	Marietta	Looney, M. D.....	Burneyville
Beeler, C. A.....	Burneyville	Martin, A. E.....	Marietta
Crawley, J. J.....	Overbrook	Mathews, W. F.....	Bomar
Gardner, R. A.....	Marietta	Gardner, B. S.....	Marietta

MAJOR COUNTY

Davis, F. P.....	Enid	Specht, Elsie L.....	Rusk
Gleason, W. L.....	Fairview	Smith, M. M.....	Fairview
Johnson, B. F.....	Fairview	Townsend, B. I.....	Fairview
McCall, P. C.....	Fairview		

MARSHALL COUNTY

Belt, M. D.....	Woodville	Haynie, John A.....	Aylesworth
Blayloek, T. A.....	Madill	Haynie, W. D.....	Powell
Bray, A. H.....	Madill	Robinson, P. F.....	Madill
Collins, J. A.....	Linn	Winston, S. P.....	McMillan
Gaston, J. I.....	Kingston		

MAYES COUNTY

Hillis, J. E.....	Pryor	Puckett, Carl.....	Pryor
King, F. S.....	Pryor	Tilly, G. W.....	Pryor
Mitchell, J. L.....	Pryor	White, L. C.....	Adair
Pierce, E. L.....	Salina		

M'CLAIN COUNTY

Barger, G. S.....	Wayne	McCurdy, W. C.....	Purcell
Childs, J. S.....	Purcell	McCurdy, T. C.....	Purcell
Colby, J. H.....	Purcell	Tralle, G. M.....	Purcell

M'CURTAIN COUNTY

Denison, Jim.....	Garvin	McCaskill, W. B.....	Idabell
Graydon, A. S.....	Isabell	McDonald, C. R.....	Garvin
Howard, W. E.....	Valliant	Morland, J. T.....	Idabell
Lemons, J. M.....	Bismark	Morland, W. A.....	Idabell
Martin, A. J.....	Valliant	Oliver, R. B.....	Bokhoma
Mabry, W. L.....	Valliant		

M'INTOSH COUNTY

Barton, A. H.....	Onapa	Randle, T. C.....	Checotah
Graves, G. W.....	Hitchita	Rice, J. F.....	Eufaula
Lee, N. P.....	Checotah	Tolleson, W. A.....	Eufaula
McCullough, J. H.....	Checotah	Vance, B. J.....	Checotah
Nowlin, N. R.....	Oklahoma City	West, Geo. W.....	Eufaula

MURRAY COUNTY

Adams, J. A.....	Sulphur	Slover, Geo. W.....	Sulphur
Dunn, Robert.....	Davis	Slover, J. T.....	Sulphur
Ponder, A. V.....	Sulphur	Sharp, J. J.....	Iona
Powell, W. H.....	Palmer		

MUSKOGEE COUNTY

Aiken, S. W.....	Muskogee	Jennings, H. B.....	Muskogee
Ballentine, H. T.....	Muskogee	Klass, O. C.....	Muskogee
Blakemore, J. L.....	Muskogee	Lee, John E.....	Haskell
Brown, J. M.....	Muskogee	Lightfoot, J. B.....	Muskogee
Carlson, T. C.....	Hoffman	Mitchell, P. S.....	Haskell
Callahan, J. O.....	Muskogee	Montgomery, A. B.....	Muskogee
DeGroot, C. E.....	Muskogee	Nagle, Wm.....	Muskogee
Donnell, R. N.....	Muskogee	Nesbitt, P. P.....	Muskogee
Farris, R. C.....	Porum	Noble, J. G.....	Muskogee
Flamm, L. F.....	Boynton	Oldham, I. B.;.....	Muskogee
Floyd, W. E.....	Muskogee	Rice, C. E.....	Muskogee
Fryer, S. J.....	Muskogee	Rogers, H. C.....	Muskogee
Fuller, J. S.....	Ft. Gibson	Rogers, C. T.....	Muskogee
Harris, A. W.....	Muskogee	Sapper, E. J.....	Warner
Hoss, Sessler.....	Muskogee	Shankle, H. D.....	Muskogee
Howell, O. E.....	Oktaha	Smith, R. R.....	Muskogee

Smith, M. F.....	Haskell	Vann, Wade.....	Porum
Smithett, G. A.....	Muskogee	Warterfield, F. E.....	Muskogee
Thompson, C. A.....	Muskogee	Warmack, J. C.....	Muskogee
Thompson, M. K.....	Muskogee	White, J. H.....	Muskogee
Tilly, W. T.....	Muskogee		

NOWATA COUNTY

Brookshire, J. E.....	Nowata	Lawson, D. M.....	Nowata
Collins, J. R.....	Nowata	Narin, Wm.....	Nowata
Collins, E. F.....	Nowata	Strother, L. T.....	Nowata
Freer, B. W.....	Nowata	Russell, E. M.....	Nowata
Hughes, Lawson.....	Lenapah	Sudderth, J. P.....	Nowata
Haggard, J. B.....	South Coffeyville	Waters, Geo. A.....	Lenapah
Howell, D. D.....	Nowata		

NOBLE COUNTY

Brafford, S. F.....	Billings	Lovelady, O. E.....	Red Rock
Brengle, W. B.....	Perry	Renfrow, T. F.....	Billings
Coldiron, D. F.....	Bliss	Stewart, L. D.....	Billings
Emerson, A. V.....	Lucien	Sheldon, John A.....	Perry
Keeler, Frank L.....	Perry	Waison, Bruce.....	Perry
Kuntz, Lambertus.....	Perry		

OKFUSKEE COUNTY

Board, J. W.....	Okemah	McDonald, J. G.....	Okfuskee
Griffith, W. C.....	Weleetka	Stiles, G. S.....	Micawber
Hilsmeyer, F. E.....	Weleetka	Reber, G. A.....	Okemah
Lovelady, Benton.....	Okemah	Bombarger, C. C.....	Paden

OKLAHOMA COUNTY

Andrews, L. E., Coleord Bldg.,	Oklahoma City	Clement, W. R., Capitol Hill.....	Oklahoma City
Bailey, F. M., Am. Nat. Bank Bldg.....	Oklahoma City	Cloudman, H. H., Insurance Bldg.....	Oklahoma City
Bevan, W. R. State Nat. Bank Bldg.....	Oklahoma City	Coley, A. J., Coleord Bldg.....	Oklahoma City
Blesh, A. L., State Nat. Bank Bldg.....	Oklahoma City	Cummings, W. C., Am. Nat. Bank Bldg.....	Oklahoma City
Boyd, W. J., Security Bldg.,	Oklahoma City	Cunningham, S. R., Majestic Bldg.....	Oklahoma City
Bradford, C. B., Lee Bldg.....	Oklahoma City	Day, C. R., Security Bldg.....	Oklahoma City
Buchanan, T. A., Lee Bldg.....	Oklahoma City	Davenport, A. E., Insurance Bldg.....	Oklahoma City
Buxton, L. H., Indiana Bldg.....	Oklahoma City	Davis, E. F., Coleord Bldg.....	Oklahoma City
Camp, F. K., Herskowitz Bldg.	Oklahoma City	Dicken, W. E., Am. Nat. Bank Bldg.....	Oklahoma City

Dixon, W. E., Security Bldg.....	Lain, E. S., State Nat. Bank
.....Oklahoma City	Bldg.....Oklahoma City
Earnhart, E. G., 417 N. Harvey	La Motte, G. A., Coleord Bldg.
.....Oklahoma City	.....Oklahoma City
Ernstberger, L. J., Lee Bldg.	Lansford, Wm., 101½ W. Main
.....Oklahoma City	.....Oklahoma City
Edwards, R. T., State Nat.	Lee, C. E., State Nat. Bank
Bank Bldg.....Oklahoma City	Bldg.....Oklahoma City
Fishman, C. J., Coleord Bldg.	Long, R. D., Coleord Bldg.....
.....Oklahoma City	.....Oklahoma City
Fletcher, T. H.....Edmond, Okla.	Looney, R. E., Am. Nat. Bank
Foster, R. L., State Nat. Bank	Bldg.....Oklahoma City
Bldg.....Oklahoma City	Martin, J. T., Lee Bldg.....
Fowler, W. A., Lee Bldg.....	.....Oklahoma City
.....Oklahoma City	Maxwell, J. H., 225½ W. Main
Fulton, George, Campbell Bldg.	.....Oklahoma City
.....Oklahoma City	McHenry, D. D., Coleord Bldg.
Fullington, W. A., Security	.....Oklahoma City
Bldg.....Oklahoma City	Meek, F. B., Oklahoman Bldg.
Ferguson, E. S., State Nat.	.....Oklahoma City
Bank Bldg.....Oklahoma City	Meely, J. M., Security Bldg.....
Gay, Ruth A., Majestic Bldg.....	.....Oklahoma City
.....Oklahoma City	Messenbaugh, J. F., Coleord
Gotchy, E. D., State Nat. Bank	Bldg.....Oklahoma City
Bldg.....Oklahoma City	Moorman, L. J., State Nat. Bank
Haas, Karl.....Harrah, Okla.	Bldg.....Oklahoma City
Hall, B. A., 120½ N. Robinson	Morgan, S. L., 411 W. Reno.....
.....Oklahoma City	.....Oklahoma City
Hall, J. F., 225½ W Main.....	Norman, Geo. R.....Luther, Okla.
.....Oklahoma City	Pearce, W. E., Third and Broad-
Hartford, J. S., Security Bldg.	way.....Oklahoma City
.....Oklahoma City	Phelan, J. R., 225½ W. Main.....
Howard, R. M., Security Bldg.	.....Oklahoma City
.....Oklahoma City	Pine, J. S., new P. O. Bldg.....
Hunter, S. M., Baltimore Bldg.	.....Oklahoma City
.....Oklahoma City	Proffitt, J. H., State Nat. Bank
Johannes, A. D., Security Bldg.	Bldg.....Oklahoma City
.....Oklahoma City	Randall, L. C., A. Nat. Bank
Jolly, W. J., Lee Bldg.....	Bldg.....Oklahoma City
.....Oklahoma City	Rathbun, E. D., 1301 W. 22nd.....
Kelly, J. F., 129½ W. Main.....	.....Oklahoma City
.....Oklahoma City	Reck, J. A., Coleord Bldg.....
Kendall, W. L., Coleord Bldg.	.....Oklahoma City
.....Oklahoma City	Reed, Horace, State Nat. Bank
Kuhn, J. F., State Nat. Bank	Bldg.....Oklahoma City
Bldg.....Oklahoma City	

Riely, L. A., State Nat. Bank Bldg.....	Oklahoma City	Wells, E. A., Lee Bldg.....	Oklahoma City
Robinson, O. T.....	Britton, Okla.	.....	Oklahoma City
Roland, M. M., State Nat. Bank Bldg.....	Oklahoma City	Wells, W. W., Lee Building.....	Oklahoma City
Rolater, J. B., Colcord Bldg.....	Oklahoma City	.....	Oklahoma City
.....	Oklahoma City	West, A. K., Majestic Bldg.....	Oklahoma City
Russell, U. L., Oklahoman Bldg.	Oklahoma City	.....	Oklahoma City
.....	Oklahoma City	Westfall, L. M., Colcord Bldg.	Oklahoma City
Salmon, W. T., State Nat. Bank Bldg.....	Oklahoma City	.....	Oklahoma City
Sanger, F. M., Lee Bldg.....	Oklahoma City	White, A. W., Colcord Bldg.....	Oklahoma City
.....	Oklahoma City	.....	Oklahoma City
Sanger, W. M., Lee Bldg.....	Oklahoma City	Weir, W. M., Colcord Bldg.....	Oklahoma City
.....	Oklahoma City	.....	Oklahoma City
Schafer, R. F., Oklahoman Bldg.....	Oklahoma City	Will, A. A., Colcord Bldg.....	Oklahoma City
Smith, M., Colcord Bldg.....	Oklahoma City	.....	Oklahoma City
Sorgatz, F. B., Insurance Bldg.	Oklahoma City	Williams, C. W., State Nat. Bank Bldg.....	Oklahoma City
.....	Oklahoma City	Wood, I. J.....	Jones, Okla.
Stone, S. N.....	Edmond, Okla.	Wynne, H. H., 208½ W Main.....	Oklahoma City
Stout, M. E., State Nat. Bank Bldg.....	Oklahoma City	.....	Oklahoma City
Taylor, C. B.....	Spencer, Okla.	Young, A. D., Security Bldg.....	Oklahoma City
Taylor, W. M., State Nat. Bank Bldg.....	Oklahoma City	.....	Oklahoma City
Thomas, W. C., Security Bldg.	Oklahoma City	Ferguson, C. D., State Nat. Bank Bldg.....	Oklahoma City
.....	Oklahoma City	Hull, R. L., Am. Nat. Bank Bldg.....	Oklahoma City
Todd, H. C., Indiana Bldg.....	Oklahoma City	.....	Oklahoma City
Wall, G. A., Metropolitan Bldg.	Oklahoma City	Earnheart, C. E., 417 N. Harvey Street.....	Oklahoma City
.....	Oklahoma City	Howard, Harvey, Am. Nat. Bank Bldg.....	Oklahoma City
Wallace, W. J., Am. Nat. Bank Bldg.....	Oklahoma City	.....	Oklahoma City
Watson, L. F., Colcord Bldg.....	Oklahoma City	Taylor, C. B.....	Spencer, Okla.
		Riley, J. W., 119 S. 5th Street .	Oklahoma City

OKMULGEE COUNTY

Bireaw, J. E.....	Okmulgee	Ming, C. M.....	Okmulgee
Berry, V.....	Okmulgee	Mitchener, W. C.....	Okmulgee
Breese, H. E.....	Henryetta	Mooney, R.....	Henryetta
Cott, W. M.....	Okmulgee	Oliphant, J. A.....	Okmulgee
Culp, A. H.....	Beggs	Perkins, J. H.....	Henryetta
Hollingsworth, F. H.....	Okmulgee	Torrence, L. B.....	Okmulgee
Little, W. G.....	Okmulgee	Weiskotten, W. O.....	Morris

OSAGE COUNTY

Aaron, W. H.....	Pawhuska	Colley, T. J.....	Hominy
Byrd, R. A.....	Foraker	Dewey, C. H.....	Pawhuska

Emis, J. M.....	Pawhuska	Skinner, Benj.....	Pawhuska
Goss, G. W.....	Pawhuska	Speck, A. J.....	Pawhuska
Mullens, Ira.....	Hominy	Walker, Harry.....	Pawhuska
Neale, Q. B.....	Pawhuska	Wharton, Divonis.....	Pawhuska

OTTAWA COUNTY

Hollingsworth, J. I.....	Muskogee	Wormington, F. L.....	Miami
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PAWNEE COUNTY

Phillips, G. H.....	Pawnee	Watkins, J. C.....	Hallett
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PAYNE COUNTY

Beach, C. H.....	Glencoe	Janeway, D. F.....	Stillwater
Cash, J. H.....	Glencoe	McQuown, H.....	Stillwater
Cleverdon, L. A.....	Stillwater	Murphy, J. B.....	Stillwater
Hughes, Eli.....	Stillwater	Pickering, J. H.....	Stillwater
Holbrook, R. W.....	Perkins	Seton, C. E.....	Stillwater

PONTOTOC COUNTY

Hartman, T. W.....	Ada
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POTTAWATOMIE COUNTY

Anderson, R. M.....	Shawnee	Goodrich, J. W.....	Shawnee
Applewhite, G. H.....	Tecumshe	Gray, E. J.....	Tecumseh
Baker, M. A.....	Shawnee	Hamilton, B. F.....	Shawnee
Ball, W. A.....	Wanette	Henderson, W. E.....	Shawnee
Baxter, G. S.....	Shawnee	Hughes, J. E.....	Shawnee
Bence, F.....	Shawnee	Kaylor, R. C.....	McCloud
Blickensderfer, C.....	Shawnee	Mahr, J. C.....	Oklahoma City
Blount, W. T.....	Asher	Marshall, J. W.....	Shawnee
Bloss, C. M.....	Tecumshe	Martin, W. S.....	Asher
Bradshaw, J. T.....	Shawnee	McAlister, E. R.....	Earlsboro
Bradford, W. C.....	Shawnee	McGee, W. N.....	Shawnee
Butler, W. R.....	Maud	Mitchell, Esther.....	Shawnee
Byrum, J. M.....	Shawnee	Nickerson, John W.....	Shawnee
Calhoun, Z. T.....	Trousdale	Nye, L. A.....	Okemah
Campbell, H. G.....	Asher	Pigg, W. B.....	Shawnee
Cannon, J. S.....	Shawnee	Reeder, H. M.....	Asher
Carson, F. L.....	Shawnee	Rice, E. E.....	Shawnee
Carter, J. S.....	Shawnee	Rowland, T. D.....	Shawnee
Cone, H. L.....	Maud	Royster, J. H.....	Wanette
Cordell, U. S.....	Romulus	Sanders, T. C.....	Shawnee
Cullum, J. C.....	Earlsboro	Scott, J. H.....	Shawnee
Colvert, Geo. W.....	Tecumseh	Taylor, J. C.....	Chelsea
Ellis, J. B.....	Shawnee	Wagner, H. A.....	Shawnee
Farris, J. B.....	McComb	Warhurst, M. A.....	Sylvan
Gallagher, W. M.....	Shawnee	Wilson, H. H.....	Shawnee

PITTSBURG COUNTY

Allen, E. N.....	McAlester	Long, Tom.....	McAlester
Barnett, J. Z.....		Little, J. E.....	McAlester
.....	Sulphur Springs, Ark.	Mitchell, R. L.....	Vinita
Barton, V. H.....	McAlester	Mullens, G. C.....	Kiowa
Bond, R. I.....	Hartshone	Munn, R. A.....	McAlester
Carlock, A. E.....	Hartshone	Norris, T. T.....	Crowder
Champman, T. S.....	McAlester	Pemberton, R. K.....	Krebs
Echols, J. W.....	McAlester	Rice, O. W.....	Alderson
Fowler, Wm.....	Alderson	Robinson, J. C.....	Henryetta
Gay, J. P.....	McAlester	Ross, S. P.....	Kiowa
Graves, W. C.....	McAlester	Sames, W. W.....	Hartshone
Gray, J. Worth.....	Quinton	Street, Graham.....	McAlester
Griffith, A.....	McAlester	Troy, E. H.....	McAlester
Griffin, W. F.....	Craig	Turner, S. G.....	Krebs
Grubbs, J. O.....	N. McAlester	Watson, F. L.....	Alderson
James, E. D.....	Haileyville	Williams, H. E.....	McAlester
Johnston, J. C.....	McAlester	Wilson, McClelland.....	McAlester
Long, LeRoy.....	McAlester		

ROGERS COUNTY

Anderson, F. A.....	Claremore	Howard, W. A.....	Chelsea
Bassman, Caroline.....	Claremore	Lerskov, A. W.....	Claremore
Bass, E. Y.....	Talala	Means, Jas. F.....	Claremore
Bryan, W. G.....	Oologah	Morrison, G. W.....	Chelsea
Bushyhead, J. C.....	Claremore	Smith, J. F.....	Neodesha
Caldwell, Chas. W.....	Chelsea	Stemmens, J. M.....	Oologah
Dickson, T. B.....	Chelsea	Strickland, Geo.....	Claremore
Hays, W. F.....	Claremore	Waldrop, J. G.....	Claremore
Hensal, T. W.....	Foyil		

ROGER MILLS COUNTY

Gregoire, J. W.....	Cheyenne	Dorroh, Lee.....	Hammon
Miller, J. P.....	Cheyenne		

SEMINOLE COUNTY

Black, W. R.....	Little	Phillips, W. D.....	Seminole
Harber, J. N.....	Seminole	Turlington, M. M.....	Seminole
Harrison, T. F.....	Wewoka	Van Sant, Guy B.....	Wewoka
Knight, W. L.....	Wewoka		

SEQUOYAH COUNTY

Burnett, J. A.....	Marble City	Jones, S. B.....	Sallisaw
Carnell, M. D.....	Sallisaw	McKeel, Sam.....	Sallisaw
Hicks, A. A.....	Muldrow	Morris, I. C.....	Vian
Hudson, V. W.....	Salisaw	Sosbee, J. W.....	Gore
Hunter, W. M.....	Vian		

STEPHENS COUNTY

Adams, J. M.....	Duncan	Haraway, P. M.....	Marlow
Appling, J. S. A.....	Doyle	Harbison, J. E.....	Alma
Barnes, T. C.....	Marlow	Harrison, C. M.....	Comanche
Brymer, W. G.....	Carnegie	Howell, W. T.....	Duncan
Christian, P. C.....	Bray	Holiday, J. R.....	Oklahoma City
Conger, H. A.....	Duncan	Long, Dock.....	Duncan
DeMeglio, Edwardo.....		Montgomery, D. M.....	Marlow
	Oklahoma City	Montgomery, R. L.....	Marlow
Frie, H. C.....	Duncan	Plunkett, B. J.....	Duncan
Frost, C. E.....	Duncan	Spears, W. S.....	Velma
Fuller, T.....	Devol	Williamson, S. H.....	Duncan

TEXAS COUNTY

Doughty, J. M.....	Texhoma	McMillan, James.....	Goodwell
Hayes, R. B.....	Guymon	Risen, W. J.....	Hooker
Langston, W. H.....	Guymon	Tucker, W. V.....	Goodwell

TILLMAN COUNTY

Bacon, O. G.....	Frederick	Priestly, F. G.....	Frederick
Comp, G. A.....	Manitou	Roberts, H. L.....	Frederick
Fair, A. B.....	Frederick	Rosenberger, F. E.....	Grandfield
Gillis, J. A.....	Frederick	Ryan, J. N.....	Freedrick
Hays, A. J.....	Frederick	Spurgeon, T. F.....	Frederick
Mitchell, L. A.....	Frederick	Van Allen, J. P.....	Frederick
Osborne, J. D.....	Frederick		

TULSA COUNTY

Butler, G. H.....	Tulsa	Roth, A. W.....	Tulsa
Brodie, W. W.....	Tulsa	Rogers, W. H.....	Tulsa
Bland, J. C.....	Red Fork	Wadsworth, D. U.....	Tulsa
Calhoun, C. E.....	Tulsa	Wagner, R. S.....	Tulsa
Clinton, F. S.....	Tulsa	Woody, W. W.....	Tulsa
Cohenour, E. L.....	Tulsa	Wright, W. E.....	Tulsa
Conway, W. Q.....	Tulsa	Balance, R. A.....	Tulsa
Dart, L. W.....	Tulsa	Brown, P. R.....	Tulsa
Grosshart, R.....	Tulsa	Cook, W. A.....	Tulsa
Hawley, S. D.....	Tulsa	Kimmons, S. H.....	Tulsa
Mohrman, S. S.....	Tulsa	Mayginnnes, P. H.....	Tulsa
Houser, M. A.....	Tulsa	Reeder, C. L.....	Tulsa
Mayginnnes, N. W.....	Tulsa	Webb, J. E.....	Tulsa

WASHITA COUNTY

Bungardt, A. H.....	Cordell	Leverton, W. R.....	Carter
Chumbley, C. A.....	Rocky	McQuaid, J. M.....	Cloud Chief
Davis, S. C.....	Colony	Neal, A. S.....	Cowden
Harms, J. H.....	Cordell	Sherburne, A. M.....	Cordell
Jester, J. A.....	Rocky	Tidball, Wm.....	Sentinel
Jeter, A. J.....	Foss	Weaver, E. S.....	Korn
Kerley, J. W.....	Cordell	Weber, A. A.....	Bessie
Lee, T. J.....	Rocky		

WAGONER COUNTY

Bates, S. R.....	Wagoner	Lyles, S. D.....	Wagoner
Burdett, C. W.....	Wagoner	Reich, J. L.....	Wagoner
Carder, A. E.....	Coweta	Ruble, G. W.....	Wagoner
Cobb, Isabelle.....	Wagoner	Shinn, T. J.....	Wagoner
Estes, D. F.....	Mark	Smith, F. W.....	Wagoner
Gordon, G. R.....	Wagoner	Williams, J. M.....	Wagoner
Joblin, W. R.....	Porter		

WASHINGTON COUNTY

Athey, J. V.....	Bartlesville	Staver, B. F.....	Bartlesville
Gunter, J. T.....	Ochelata	Sutton, F. R.....	Bartlesville
Pollard, J. W.....	Bartlesville	Somerville, O. S.....	Bartlesville
Owens, A. P.....	Bartlesville	Smith, J. G.....	Bartlesville
Pryor, R. E.....	Bartlesville	Sykes, W. M.....	Oglesby
Parks, S. M.....	Bartlesville	Weber, H. C.....	Bartlesville
Rammel, W. E.....	Bartlesville	Woodring, G. F.....	Bartlesville

WOODS COUNTY

Bilby, G. N.....	Alva	Gregg, O. R.....	Alva
DeGroat, M. E.....	Alva	Herod, F. P.....	Alva
Gordon, G. G.....	Waynoka	Jamison, C. W.....	Alva
Gerrish, A. E.....	Alva	Stout, William.....	Avard
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SOME REMARKS ON THE DIAGNOSIS OF SURGICAL LESIONS OF THE KIDNEY.

By J. Hutchings White, M. D., Muskogee, Oklahoma.

The matter of the diagnosis of surgical lesions of the kidneys has not received, commensurate with the importance, the attention it merits. Every physician nowadays is familiar with the signs and symptoms of appendicitis and gall bladder disease, but how many are there who are not conversant with the indications of surgical conditions of the kidneys. Sometime since while attending a clinic at the Presbyterian Hospital in New York City, I was strongly impressed with this fact by a case which came up during the afternoon. A young lady who had been troubled with pain and discomfort in her left lumbar region, worse at or near her menstrual periods, consulted a prominent gynaecologist who examined her and made a diagnosis of left ovarian trouble and advised an operation. She was on her way to his private hospital when some kind friend interferred and persuaded her to go to the Presbyterian hospital. Here during the routine examination an Xray was made of the left kidney, which revealed three small stones in the lower pole. At operation the stones were removed and the patient made an uneventful recovery.

Read before the Annual Meeting of the Oklahoma State Medical Association, Muskogee, May, 1911.

The best method of palpating the kidney is to have your patient in a standing position leaning slightly forward with both hands resting on a table or chair, the examiner standing behind the patient and palpating the kidney from the front. The next is to have the patient in a lateral half sitting position, shoulders well supported and legs drawn up to relax the abdominal muscles. Patient should also be examined in the dorsal position. In this manner we can easily outline floating kidneys and fair size tumors. In patients with thick abdominal walls it may be necessary to administer an anaesthetic.

In all surgical diseases of the kidneys where a surgical operation is contemplated for their relief the examination of the urine plays a most important role in diagnosis; and while it is oftentimes easy to determine from the character of the urine discharged through the urethra that kidney disease is or is not present, the question of whether one or both kidneys are affected, and whether one remains healthy while the other is diseased; in other words, whether it is safe to remove one kidney is a question by no means so easy to answer. The general question of disease of the kidney may readily be determined by the occurrence of albumen, the various forms of kidney casts, of kidney epithelium, blood, pus, and other materials in the urine. The question of which of the two kidneys furnishes the abnormal ingredients remains a very different and a much more difficult matter to decide. In other words, before this question can be answered positively, it is usually necessary to collect the urine separately from each kidney. The methods in use at the present time are catheterization of the ureters and segregation of the urine. The first method, while far more difficult, is by far the most reliable; the second method answers in a certain proportion of cases, and fails utterly in others.

It may be impossible to pass the cystoscope at all, either on account of the narrow meatus, stricture of the urethra or enlargement of the prostate. The capacity of the bladder may be less than two ounces. Blood or pus may be present in such large quantities as to render the examination futile, or the general condition of the patient may be such as to render the introduction of the cystoscope inexpedient. I think it a good plan, in all cases where a cystoscope examination is to be made to have the patient under observation for a day or two and administer each day thirty grains of hexamethyltetramine in ten grain doses. It is generally advisable to use some form of local anaesthetic in the deep urethra. At times it will be necessary to use a general anaesthetic though this should be avoided if possible as it changes the character of the urine.

There are many makes of cystoscopes on the market and my limited time will not permit of going into the detail of construction of these various instruments. There is the direct and indirect vision instrument. I have for some years used the Elsner Cystoscope. This is a direct vision instrument and has proven very satisfactory to me. The Kelley tube I occasionally use in the female. Before beginning the examination the cystoscope should be tested to see that the lamp, cords, electric connections, and controller or battery are in good working order. A catheter should be introduced into the bladder and the same thoroughly irrigated with warm boracic acid solution until the washings return clear, about five ounces being left in the bladder.

The cystoscope is now introduced into the bladder, the current cord is attached, the ureters located, their orifices carefully inspected for abnormalities, noting their size, shape and general appearance. If watched for a short time the urine will be seen to flow in a little jet. Often times pus, or blood may be seen coming from the ureter and occasionally a brown object (stone) may be seen plugging the orifice. If it is the origin of blood we are tracing and the fluid coming from the other ureter is clear it is not always necessary nor advisable to catheterize the ureters. In some instances, however, this blood may be due to a stone in the ureter. In such a case it will be advisable to use a ureteral catheter and locate as near as possible the site of the stone. In those cases of pus issuing from the ureter it seems to me a wise thing to always catheterize the ureters. In a case of my own which I have had under observation for something over three years, a very grave mistake might have been made had not both ureters been catheterized. This was a case of pyelonephritis of the left kidney and a pyelitis of the right.

While I would prefer to rely upon the cystoscope the segregator has a field of usefulness. This instrument when introduced into the bladder is so arranged that it may be manipulated to form a dam or partition in the bladder thus separating the urine from each kidney. This urine will then flow through an outlet in the instrument and be collected in separate containers outside. In case there are more than two ureters the third ureter might contaminate the urine from each kidney.

Among the various tests used to ascertain the functional activity of the kidney may be mentioned, the methylene blue, consumption of a specified quantity of water, catheterizing the ureters and measuring the output from each for a given length of time. The diseased kidney does not eliminate as rapidly as the normal organ.

Casper lays great stress upon the Philoridzin test. It is based upon the fact that philoridzin 0.005 gm. combined with a small quantity of sodium carbonate in solution, when injected hypodermically will produce a transient glycosuria, lasting about three hours. After the injection both ureters are catheterized and the urine from each kidney tested for sugar. The relative proportion of sugar contained in the two specimens indicates the functional activity of or the want of such activity in either kidney. The absence of sugar in either specimen indicates that the functional activity of that kidney is destroyed. If the freezing point of the urine is now taken and it shows a low freezing point the kidney is functionally incapacitated.

While we are able by these methods to trace to the kidney the origin of pus or blood, neither the cystoscope nor catheters tell us the trouble is due to stone nor that it is not due to stone. Dr. Kelly of Hopkins has used with some degree of success the waxed tip catheter which when introduced to the pelvis of the kidney and comes in contact with a stone slight scratches are made upon the wax by the stone. Here however, the value of the X-ray overshadows any other means we have.

It cannot be said that the X-ray is an infallible means of detecting the presence or absence of stones in the kidney, in the ureter and urinary bladder yet it furnished a certain means of diagnosis in a large proportion of cases.

tached and the current turned on. A general inspection of the bladder is The limitation is due partly to the character of the stone, errors in technic or developing. Stones of the urinary tract usually contain one or more of the following; oxalate of lime, uric acid, and the phosphates, generally oxalate of lime and uric acid. Stones composed of uric acid produce a faint shadow which is easily blotted out. Stones containing 10 per cent or more of oxalate of lime produce a shadow as do phosphatic stones. In order to detect a stone in the pelvis of the kidney it is necessary to produce a negative which will show distinctly the additional density of the stone as compared with the shadow cast by the thick portion of the human body. If the individual is large and stout and has thick abdominal walls the difficulties are immensely increased. The quality of an X-ray picture according to Johnson, necessary to enable one to exclude the presence of stones in the kidney or ureter should be such that the transverse processes of the lumbar vertebrae the last two ribs and the outer border of the psoas muscles on either side of the vertebrae show sharply and plainly. The shadow of a stone if present in the pelvis of the kidney, will be found just below the last rib and about two and one-half inches from the vertebral column. Stones in the ureter are generally found in the lower third.

A free purgation should be carried out before exposing a patient to the X-rays. This will clean out any fecal concretions that may cast shadows similar to stones. Repeated exposures are sometimes necessary. When required they should be at long intervals.

An enormous amount of time, effort, ingenuity and skill has been exhibited by numerous observers throughout the world to render these methods of examination accurate. These efforts have been rewarded with more than a fair amount of success. And though not one of us may add one jot we can at least give to our patients the benefit derived from the knowledge of a fellow practitioner's ingenuity. It is only by adopting routine and thorough examinations of our patients that we are going to catch those cases which are occasionally operated on or treated as some other condition and we awake to error too late to benefit our patient. Repeated attacks of chill, fever and sweats are not always malaria. Neither are all those cases which during the puerperium run a temperature, infection of the general organs. Pyelitis should always be eliminated. When not taken care of and vigorously treated in the early stages many times develop into a pyelonephritis or surgical kidney. Occasionally we encounter this trouble following typhoid fever. A patient convalesces for four or eight weeks has another attack of chill, and fever very similar to the typhoid type, running a course of six or eight weeks, to be repeated at a later date. Such a case came up in my practice some time ago.

To recapitulate:

Examine urine both chemically and microscopically in all cases.

If pus or blood is found trace to its source.

The use of the cystoscope, ureteral catheterization, and the X-ray are invaluable adjuncts in the diagnosis of surgical lesions of the kidney.

DISCUSSION.

Dr. Horace Reed, Oklahoma City:

There is no branch of surgery where a man should be surer of diagnosis than when he operates the kidney. I was glad to see that the burden of the doctor's paper was on methods that are in vogue and have been found to be practicable. I do not think any man should operate on a kidney when he has not determined the functioning capacity of the other kidney. For the purpose of determining the functioning capacity of the kidney the catheterizing cystoscope is to be classed as first.

I prefer the foreign instrument. I have tried the Ellsner instrument. I have also used the Kelly instrument for the catheterization of the female, but since I have learned and practiced with Nitze's instrument I cannot see why any one should wish not to use it. It is so easy for the operator and for the patient. It can be used for both female and male; it is easier to catheterize the male than the female with this instrument.

When there are more than two ureteral openings there is always to be found a definite arrangement of such openings. These openings, together with the intraureteric ridge, will form a triangle with the apex at the internal urethral orifice. The supernumerary opening which comes nearest the urethral orifice is from the supernumerary ureter which drains the upper pole of the corresponding kidney. To this fact I have never known of any exceptions. Recently I had the privilege of examining a large collection of anatomical material which demonstrated this fact.

A valuable method for testing the functioning capacity of the kidney is the Indigo-carmin test. This test is easily made and is as follows:

Four (4) C. C. of a 4 per cent solution of Indigo-carmin is injected into the fleshy portion of the thigh. The time of such injection is noted, the bladder having been previously prepared for cystoscopy. The diagnostic cystoscope is introduced and the ureteral openings carefully watched.

From the ureter corresponding to a healthy kidney, a blue stream will be seen spouting at intervals in from seven (7) to fifteen (15) minutes. If the functioning capacity of the kidney is seriously impaired, the stream may be delayed for about twenty or thirty minutes.

I would like to add a few remarks also about a method of diagnosis which has proven to be of great value in diagnosis of tuberculous lesion of the kidney in its early stages: The injection of 1-2 to 1 (one) m. g., of Koch's old tuberculin will produce pain in a tubercular kidney, may also produce a slight hemorrhage from such kidney, or, at least, the patient will notice an increased amount of tenderness in the side corresponding to the diseased kidney when one percusses over the kidney region. Professor Schlesinger says that with this test giving the signs mentioned above, one is justified in making the diagnosis of a tubercular kidney, even where it has been impossible to demonstrate the presence of tubercle bacilli in the urine.

We are laying emphasis on the fact today, and rightly so, that diagnosis is the greatest thing in medicine. And if there is a branch of medicine or surgery where we should be particularly careful, it is when we contemplate operating the kidney, especially, removing the kidney.

THE GENERAL PRACTITIONER AS A SURGEON

Arthur S. Risser, Blackwell, Oklahoma.

The reason for my paper lies in the thought suggested by several experiences which have come to me recently, both personally and by the mouths of brother practitioners. My thoughts have dwelt on this subject for several reasons, not the least of which is the fact that I have failed to live up to the high standard I desire to attain. I need the criticism, perhaps the implied condemnation, but above all do I personally need the encouragement and the exhortation to do better the surgical work of the general practitioner.

In these ultra-surgical days when we have as it were, run mad after the Gods of Surgery, the knife and the scissors, it would seem but natural for a general practitioner to select such a subject as mine and expatiate on the possibilities of surgery. It is not my purpose to belittle the work of the specialist by maintaining that the general practitioner shall be an all round "specialist" and a skilled surgeon, retaining and treating all cases that may come to him, nor on the other hand do I desire the general practitioner to be merely a sort of procurer or feeder for the specialist or surgeon. In my humble judgment the general medical man must be infinitely more than that if he would be true to his proper destiny. His work is more essential, more fundamentally important than that of the surgeon and for many reasons, some of which I hope to make apparent in my remarks, nor am I intending to minimize the importance of specialism.

I hasten to affirm that much of our wonderful progress in the science of medicine is due to the work of the specialist. I say all hail to the men whose sole aim is to master one division in the vast domain of medicine. But specialism has its Reeds, Pasteurs, Behrings as well as its Kochers and Mayos. It is a matter of common knowledge that specialists are prone to see in any symptom complex signs pointing to abnormalities of the organs included in their special branch of medicine. The natural tendency is to treat symptoms to the neglect of the body as a whole; thus the oculist ascribes a headache to errors of refraction, the gynecologist to retroversion of the uterus; the gastrologist ascribes it to gastritis, the proctologist to the piles and the neurologist to neurasthenia uncured. So the surgeon to the lay mind at least, has been all too prone in the past to prescribe surgery for almost every human ill (to the lasting discredit of surgery). In many respects and for many reasons the surgical specialist must be the final judge as to the advisability of operating—he has the advantage of experience gained from frequent operations and perhaps a few ante-mortem autopsies, he sees many cases of a kind where the general practitioner may see but a few. Nevertheless, there is a large and definite middle ground between the average patient and the surgeon. That middle ground belongs by right to the general practitioner. It is his if he will but exercise his trained intelligence and follow the dictates of an educated conscience. His destiny is, or ought to be, to act as the balance wheel of the profession and I am sanguine enough to prophesy that we as a profes-

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sion can be aroused to an appreciation of our duty; that order can be brought cannot be made efficient, at least the men of the future will be trained both in mind and heart to fulfill their sphere of duty in society, but until that time does come we must continue to bear our share of the blame for much needless surgery, as well as for much needful surgery that is not done because of lack of or lateness in diagnosis. As a profession we are daily committing the sin of omission as well as commission of surgical measures; witness the multitude of children crippled in mind as well as body by neglected adenoids; witness the cases of incarcerated and strangulated hernia, which as simple herniae might have been prevented and cured by practically safe and certain operation and for which the majority of practitioners still prescribe and fit trusses as in the dark ages; think of the children who die of stenosis or cardiac failure attending diphtheria because the physician did not intubate in time; consider the many deadly cases of renal infection secondary to prostatic enlargement which might have been prevented by practically safe operation if done in the preseptic stage.

We who, as it were, are still green in the service of Aesculapius, are destined to witness the era of greatest progress in the whole history of medical science, nor will that progress lie chiefly along surgical lines. We are to witness the forward swing of the pendulum from the mere surgical to the preventive side of medicine. We are yet to learn the practical distinction between the mere operator and the true surgeon; we will learn to prefer the man who besides knowing the indications, prognosis and therapeutic results of operation, knows also the contra-indications and respects them, who will seek first to obviate the necessity for a mutilating operation before he has resort to the knife, while of the operator it may be said "he has operated his thousands," of the true surgeon it may be said with infinitely greater credit "he has cured his thousands without resort to the knife." (Consult Journal A. M. A., Vol. 56, No. 10 p. 770 and 749).

Perhaps the majority of surgical operations are elective. Those most frequently imperative are demanded by such conditions as malignancy, certain cases of spreading gangrene, obstruction of the bowel, perforation of hollow viscera, certain hemorrhages, cases of depressed fracture of the cranial vault with continuing hemorrhage. I mention these not as the only ones but simply as illustrative of my argument that we must differentiate correctly between conditions which are essentially operative and those which are not operative. We must avoid on the one hand the Scilla of refusing to open an abscess of the palm of the hand until the patient's very life is endangered by a diffuse and spreading gangrene of the arm. On the other hand we must be equally careful to steer clear of the Charybdis of operating on any and every patient who can be persuaded to undergo the ordeal; either mistake results in discrediting legitimate and helpful surgery. We need to understand more clearly the indications, or to put it negatively, the contra-indications for operation.

Probably in no other branch of medicine has surgery been more abused than in Gynecology. Witness the thousands of unsexed and nerotic women who have sacrificed their adnexa on the altar of the Gods of Surgery. But

out of the present chaos of our medical education. If the men now in practice thank heaven we are learning that while plastic work has a legitimate place that the amputation and ablation of organs ought to be a last resort. It is true that the foundations of this knowledge have been laid, but all practitioners have not yet shared in it. When men in general practice leave their recent cases of lacerated perineum unrepaired, when they insist, for instance, that there is no permanent curative virtue in the operations to correct retroversion; when again some so-called surgeons cannot differentiate between retroversion and complicating conditions and persist in doing ventro-fixation and ventro-suspension on women of child bearing age, with consequent dystocia—is it not high time that we were learning the end results and the therapeutic value of our various operative procedures?

Gynecological surgery has all too much monopolized the field, but it is pleasant to note the fact that physiological medical gynecology is coming at last into her own. Serum and vaccine therapy, new drugs and new applications are revolutionizing gynecology.

Even in the particular field which has been considered peculiar to the general practitioner, obstetrics, we see the increasingly large demands for intelligent and skillful surgical service. I am one who believes that much of gynecologic surgery could be obviated by proper obstetric treatment during labor and the puerperium. Here is a branch of medicine which is fundamentally first to the science of medicine and second to society for the welfare of which we ought to exercise our guardianship. Neglect of asepsis is, it has seemed to me, a chief vice of the general practitioner of obstetrics; of the story of the sequellae of this neglect it can be said "the half has never been told," a neglect that would prove even more frequently disastrous were it not for the natural safeguards against infection which an all-wise Providence has provided for the protection of both patient and practitioner. We ought to avoid the humiliating experience of being ordered by our patient to sterilize our instruments; we ought to know the theoretic requirements of asepsis and we must observe them faithfully in practice. Obstetric surgery presupposes a correct knowledge of conditions and indications and proper skill in carrying out the procedures indicated. This practice demands and should receive the most careful consideration. It is generally admitted that the results of Caesarean Section would be more favorable if the general practitioner was surgically clean in his preliminary examination and manipulations.

The conversion of unfavorable into favorable positions, primary repair of perineal lacerations, placenta praevia, high forceps operation, version, post-partum hemorrhage, vaginal and abdominal Caesarian section; can we imagine any more important surgical conditions than these? Are they not worthy of the latest knowledge and the finest skill which we can bring to bear upon them? There is another perhaps most important duty which rests upon the general practitioner; I refer to the early diagnosis of malignancy. I shall never forget the picture I saw last March; a little two-roomed house on a bare and wind swept hillside farm—upon a bed within the house lay the man still in the prime of life, who had been striving to

win that farm for his family—dying he was—dying a wretched death of cancer of the neck, unable to speak because of laryngeal involvement, so weak he could not lift his head, while four little ones and a wife with a nursing babe at her breast stood about the bed and looked out upon a fatherless, husbandless, helpless, hopeless future. Never will I forget the agony of the scene. How often have we seen the mother of the family dying a wretched death with cancer, knawing away, as it were, the very throne of the home! But why dwell on such a scene? They are so frequent we have become calloused to their agony and to the shame and reproach they cast upon our profession; still we procrastinate with salves and soft words, some of us attempt to blind our eyes and those of our patients to the fact that the cancer fiend is still victorious. It is time to stop and ask ourselves whose is the responsibility for the appalling toll of human life which malignancy still takes. Of little avail is the bold and radical Ries or the Wertheim operations if we delay diagnosis until the whole abdomen is involved, because an all-wise Providence has ordained that in spite of definite advances in the art of amputation a few organs are still essential to the maintenance of life. The surgeon has done brilliant work in the cure of cancer, but the next step in our progress of victory over malignancy must be taken by the general practitioner; that step is early diagnosis. Upon the general practitioner rests the responsibility for early diagnosis and the saving of lives now sacrificed.

The general practitioner must be more prompt and skillful in diagnosing the initial stages of cancer, particularly mammary, uterine, gastric and rectal; in most cases his word carries more weight with patient, family and friends than that of the surgeon. He is the family physician, in whom the members of that family have implicit confidence while—deserving or not—the surgeon is only too often credited with bias toward indiscriminate operative measures. More than that upon the general practitioner devolves the duty of educating men and women to the probable symptoms of cancer and the danger of neglect. Diagnosis, exact diagnosis, early diagnosis is my theme. Given early diagnosis early attack will follow. We shall have to revise as it were our whole knowledge of initial symptomatology. With the present immense fund of clinical experience and knowledge of pathology the art of diagnosis must keep pace. The merest tyro knows the classical symptoms of for instance peritonitis, and hemorrhage, but the classical symptoms are terminal, and there is little we can do to save patients already moribund from ruptured ectopic pregnancy, gastric and duodenal ulcer and perforation of hollow viscera, intestinal obstruction, gall bladder trouble or pancreatitis. We must have a special knowledge of diagnostic means and methods. The demands which the future will make on the general practitioner will emphasize the art of diagnosis. At present there are two distinct and opposite tendencies active in the world of medicine; on the one hand the practical knowledge of asepsis and antisepsis, the result of animal experimentation, improvement in methods of local and general anesthesia, clinical experience and technique of operative procedures. These factors are daily enlarging the already broad and brilliant field of surgery; one need

only mention the new surgery of the chest and of the brain, nerve splicing for the cure of paralysis, direct transfusion in hemorrhage of the new-born, transplantation as well as ablation of organs. These are but examples of the wonderful advance in the beneficent work of the surgeon, but glorious as is this record there are other factors at work which are surely and steadily reducing the need of surgery to a minimum.

Chief among these are the employment of new medical agencies as vaccine and serum therapy, but especially important are the arts of prophylaxis, preventive medicine and early diagnosis. No physician who desires to be abreast of modern medicine or to give his patient the best service which science makes possible can afford to neglect these most important means. Public education and increasing knowledge of the laity are making ever growing demand for larger knowledge and finer skill on the part of the physician. Where in days gone by the "old, experienced doctor" was called the choice now falls upon the young hospital doctor."

Society has large claims upon our clearness of mind, keenness of eye, skill of hand and our probity of character. If the desire for advancement is not inherent in our minds the public will nevertheless continue but with greater insistence, to require it. Surgical conditions (so-called) will form a large part of our problems and we must learn to diagnose and treat correctly or we shall be relegated by our patients to the ranks of the back numbers.

There is a vast difference between the practitioner who prescribes pinex and peruna, who possesses neither green soap, Kelley pad or intubating set; whose only journals are the quack sheet and swamp-root advertiser who has no time for society work to the alert and progressive man abreast of the times who makes use of the microscope and the test-tube, the microtome and the blood count; who fears only stagnation and inefficiency, who if he does not feel qualified to operate all his surgical cases knows at least whether and when to send them to the operator. There is a vast difference between the two and the people are learning to make the choice. It is our privilege to read the writing on the wall. By our own conduct we shall determine either commendation and success or condemnation and failure. Books and journals are cheap, the cost of railroad fare and graduate courses is not prohibitive, men who desire places as locum tenens are many, and we owe it to our patients and ourselves to leave at intervals the shade of our shingle in order that we may associate with men who can give us a deeper insight into conditions both medical and surgical; they can teach us the indications for operative interference and the knowledge of methods and technique of treating those conditions as they should be treated.

Our profession is worthy of our best, and though the task of keeping up is Herculean in magnitude, the satisfaction of being a worthy follower of the Great Physician is well worth the time and toil the effort costs us.

DISCUSSION

Dr. J. A. Hatchett, El Reno:

We can't afford to pass this paper up without some notice of it. The

author understands thoroughly the relation between internal medicine and surgery, and the relation between the general practitioner and the specialist.

As a general practitioner I must know surgery, perhaps not in technique, but in a general way, I must know surgery. The general practitioner must read surgery, must know its limitations, know its achievements. It takes a mighty smart man to be a specialist in surgery. Most of them need something to check them. There must be some one to say, "Stand back a little; how much punishment are you going to give that man? Have you studied that man, do you know just what you are undertaking, his powers of resistance, etc.?" It is our duty to know the whole field and where medicine, and where surgery should be employed.

Dr. C. S. Bobo, Norman, Oklahoma.

I think that is one of the most educative and learned papers I have heard since being here. Its application is well made. It simply convinces me of the fact that when I hear a general practitioner say, "I don't know anything about surgery; I don't know anything about the diseases of the eye, etc.," he is a very poor doctor and is a dangerous man to be turned loose on the community. My conception of a doctor is to know everything that pertains to medicine, whether it belongs to surgery or to the specialist.

The advice our Dean gave us in his last lecture before we left college is recalled to me. He said: "Now, boys, know something besides medicine; know something about horses; know something about fish; know something about literature, if you don't, your knowledge as a physician is limited."

The matter of early diagnosis is one of the most important things to be remembered from that paper. I want to thank Dr. Risser for his paper. Dr. Risser, closing.

I had rather hard work to bring myself to say that I had a paper when the chairman asked those who had to make the fact known. But I did not read it for any effect oratorically—I read it because I have seen the need of it in my community. I think the things said in it need to be said. I do not mean to slap at the surgeon, but I have seen so much surgery that was not needed, and so much surgery that was done that was not done—if you will pardon the paradox, that I have come to feel very deeply on this subject.

I think the men on whom my criticism would fall are particularly those men who are so busy they have no time for the State Medical Association work.

Another thing I think the charges of the medical profession are not high enough to meet the requirements of our lives. We should have a fee that is more nearly commensurate with the demands upon us.

THE TREATMENT OF GONORRHOEA IN WOMEN BY THE GENERAL PRACTITIONER AS A PRELIMINARY TO OPERATION.

By J. F. Kuhn, M. D., Oklahoma City, Oklahoma.

All gonorrhoeal infections in women do not become operative. But all of them are likely to become so, and a large majority of them do in fact reach the operator sooner or later. Knowing this to be true, it is well for us to treat each case in such a manner that when it does require operative intervention, our patient will have the best chance for restoration to normal child-bearing health. It has been my fortune to operate on many women with uterus, tubes, and ovaries so badly diseased as a result of this infection, that nothing short of a complete removal would suffice to give them any possibility of enjoying health. This is a dreadful calamity and one that the average woman contemplates with awe and dread. The complete removal of the generative system is a terrible mental blow to the right thinking woman, and since in the majority of instances she is innocent of any wrong doing, it seems unjust that she should bear the whole burden. It has always seemed to me that some way might be devised for the treatment of this disease and its train of sequellae, that would leave the patient in a normal state of health, and that the operations following could be made to restore the organs to their normal function instead of their removal. To this end I began three years ago a form of treatment which had appealed to me as having possibilities. I began upon the presumption that the normal peritoneum would take care of a large amount of infection and that any method that would utilize this function would aid in the treatment of pelvic gonorrhoea. Absorption from the pelvic cavity is slower than in any other division of the peritoneum. Why could not the lymph and blood channels be made to functionate more freely and accomplish the desired end? I proposed to try, and to this end tried our old friend, normal saline solution. The local vaginal and cervical infection is treated locally by hot astringent antiseptic douches daily, local applications of 15% colloid silver solutions are used freely, the introitus is kept annointed with 10% ichthyol ointment, and these measures continued throughout the whole period of treatment. This method in simple infections, that is, where the adnexa are not as yet infected, is commonly all that is required. Many gonorrheal cases can be halted at this stage. In those cases which become operative however, the infection travels upward and outward and we see the formation of acute infections of the whole generative track. It is the majority of these cases that lead to sterility. My method of treating this stage of the disease is as follows:

At intervals of six hours the rectum is distended with normal saline solution at a temperature of 105 to 110 degrees Fahr. Beginning with a quantity that the patient can comfortably retain—say 1-2 pint—the quantity is gradually increased with each injection until she is retaining three

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to four pints. The solution is to be retained for from 20 minutes to 1-2 hour. The patient is kept in the Fowler position until all signs of tenderness have disappeared from the uterus and tubes. This may take from 2 to 4 weeks. If you have gotten the case in the first days of the initial attack 2 weeks will usually suffice, if it has become subacute or chronic there is no way of estimating the length of time. In those chronic cases where the pelvis is filled with a dense mass of adhesions there is little likelihood of a complete restoration, but even in these you will be surprised at the wonderful results. The dense inflammatory adhesions melt away in a most startling manner. The uterus becomes freely movable, and at the time of operation the tubes will have lost their crippled appearance and many times may be saved. It is in the early cases however that your surprise will be greatest, cases that appear to be almost hopeless, from a conservative viewpoint, will in two weeks time show practically no pelvic symptoms. Some of these patients will even conceive with out further treatment. All of them will be free from any symptoms of the old infection. The majority of them will have slight velementous adhesions about the uterus, tubes, and ovaries. These adhesions may be numerous enough to bind the uterus in a retroverted position, in which cases operation is necessary to prevent, bachache, headache, dysmennorrhoea, and serious nervous disorders which result from this malposition. In most of the cases there will be slight adhesions and the fimbriated ends will be occluded, no subjective symptoms are likely to be present, but the patient is barren. This condition calls for a delicate operation for the removal of the adhesions so that they shall not reform, and for the opening of the ends of the tubes in such a manner that they will remain open. Extensive resection of the tubes may even be needed, but this may go so far as to leave a stump of only one or one and a half inches, and still the patient be open to possible conception.

It is my belief that if all women suffering from pelvic gonorrhoea could be treated by this method the vast majority of them could be restored to normal child-bearing life. I am concious that the criticism will be made that ectopic gestation will follow in many of these women, but this is mere theory and cannot be proven by any statistics, practically, this should no more follow than it would in any other conservative operation on the uterus and its adnexa. I have now a series of forty-two cases treated by this method and every patient is symptomatically cured. One of these patients with old dense adhesions would not wait for the long treatment I outlined for her, so I was obliged to operate and remove everything, three chronic cases have been restored to good health but with many loose adhesions, one other of this type of cases is responding slowly, she insists upon continuing the treatment if it should take two years. Her case was one of five years standing before I saw her. In these cases after the acute symptoms have subsided the patient is allowed to be up and about allowing one hour to elapse after the injection of the normal saline.

Of the acute cases only eight have so far come to operation, four of

these have conceived, two have gone through normal labors, the other two are in the midst of normal gestation periods. Regarding the use of the antigonococcus vaccine, I will say that I have abandoned the commercial product. I believe that each patient, by this method, develops antibodies of her own which destroy the invading hosts. Certain it is that no sign of inflammation or pus has been present in any of the cases which I have operated on after the patient has undergone this treatment. My few cases of course can be no absolute criterion, but the perfect results in this number, leads me to suggest that it should be given a fair trial. I do know, that no other treatment yet devised, has done so well and I give it to you with the certain knowledge that your patients will be greatly benefited, and that when you do send to the surgeon they will return to you ever grateful for the part you have had in their restoration to health.

DISCUSSION.

Dr. D. A. Myers, Lawton, Oklahoma.

I had the pleasure of hearing Dr. Kuhn's paper at Wichita. Since that I have adopted his technic. It seems a large claim to make for the method, but, doctors, it is true. You will find that a large percentage will be cured without operation. I believe this method is worth your study and you should adopt the technic followed by Dr. Kuhn.

Dr. J. R. Phelan, Oklahoma City.

I enjoyed the Doctor's paper very much. My line of treatment has been very similar. Instead of using the saline injection I use a hot bi-chloride douche every three hours, that is, in cases where pus has not formed. In cases where there is pus in the tubes, it is better to open up the cul de sac. I do not think it is necessary to resort to hysterectomy. I think hot bi-chloride douches every three hours and ichthyol tampons at night should be used. I put in a pack at night and remove it in the morning, and use the hot bi-chloride (1 to 3000) douches. I think the patient should be kept in bed.

Dr. Strickland, _____

I have been in practice only four years. I had a case last winter similar to the doctor's. We used normal saline solutions about three weeks. Gave injections into rectum every three hours. We used tampon every night and removed it in the morning and used douche and ichthyol dressing. Had good success.

Dr. Wilson, Wynnewood, Oklahoma.

I did not have the pleasure of hearing Dr. Kuhn's paper at the Wichita meeting but read it. When I received the report I had a case on my hands, caused by the wayfaring husband. This special case was one of these extreme cases—looked as if it must be opened up or peritonitis would result from the intensity of pelvic inflammation.

I experimented on Dr. Kuhn's method. Kept patient nine days in Fowler's position—treated her sixteen days in all. Patient left considering she

was cured. Have had three examinations since and find no indications of adhesions or inflammations.

* I thank Dr. Kuhn for his idea in the matter and will try further if the opportunity presents itself.

Dr. W. T. Tilley, Muskogee, Oklahoma.

I have had no experience with the treatment that Dr. Kuhn has given. I consider his paper excellent—not knowing anything about the treatment, I want to ask Dr. Kuhn if he did not give any other treatment but that specified.

Dr. Kuhn replying:

“I use special treatment for local conditions as I prefer, but for the general infection my treatment is confined to Fowler’s position and saline solution every six hours.”

Dr. Tilley continuing:

Thank you. I often have diagnosed pus tubes on the right side and when I examined have found general pelvic cellulitis. We may be mistaken as to what we have gotten. It is hard for me to believe that normal saline solution in a woman’s rectum will cure pus tubes.

I diagnosed pus tubes sometime ago and found upon examination there were no adhesions and she had, I think, appendicitis. The general practitioner has a difficult matter before him to get a woman to stay long enough to go through the treatment and then go through an operation to see if the pus has been removed. Personally, I doubt if pus is ever removed by that treatment.

Dr. Kuhn, closing.

I want to thank you gentlemen for your discussion of the paper. I wanted to bring out a thorough discussion as I believe this is something new.

In the first place I want to reply to Dr. Tilley. It is hard to believe, but when you do believe, you will be the stronger convert. Anything that makes a doubt in our mind will make the stronger belief when the doubt is removed.

If you will notice, I said that the purpose was to bring about activity of lymph and blood flow by the use of normal saline solution, thus hastening the formation of antitoxins. The destruction of the bacteria is the result of the production of anti-bodies within the patient which destroy the invading organisms. My reason for not using the commercial bacterin is that the patients I have treated get along as well or better with the hot saline solutions alone. We all know that after a certain length of time the bacteria lose their virulence and are finally destroyed, the object of this treatment is to hasten this process.

Some ten years ago it was the custom to remove the uterus and all the organs at once. It was always a hard grubbing operation. It occurred to me that something should be done to save these unfortunate women—I thought something might be done. In the cases that come to us in private

practice, the husband is the one who is in misery. The wife may not know what the trouble is. She must be told that she must follow the treatment throughout the period if she would not be a cripple for life. •

The cases where pus forms and spills out in the pelvic cavity are the ones this paper is meant for. The cases of pelvic cellulitis have always an accompaniment of pus tubes if allowed to continue without adequate treatment. If you begin this treatment in the pre-pus stage you will get perfect results in practically every case.

I wished to put this paper before you for this reason—the majority of you are practicing in communities where one, two or three cases fall into your hands within a year. A few will recover completely; a few will recover, but will be barren; and some will come to the operating table with a long train of sequellae that usually follow in poorly treated cases, which require the removal of all the organs.

Try this method and I shall be pleased to have you report to me your findings. I believe this is a revolution in the treatment of pelvic gonorrhoea of women. You may use it in streptococcic cases. You may use it in your mixed cases. In cases of mixed infection, with the staphylococcic and gonococcic organisms, the gonococci rapidly disappear and there is usually found only the staphylococci. Your patient, in this event, forms those dense, hard adhesions which require operation. But I believe if you start early with the method outlined, nothing else will be necessary to restore a woman to normal child-bearing function than the breaking up of a few light adhesions and the resection of the fimbriae.

PERNICIOUS MALARIAL FEVER.

(By G. A. Reber, M. D., Okemah, Oklahoma.)

The word "pernicious" is now quite generally used to designate a class of cases of malarial fevers commonly called Congestive Chills, or Malignant Malarial Fever, and is that form so acute that, independently of complications, life is endangered in a few hours or a few days.

While malaria is decreasing in severity and frequency, it still continues to be one of the most prevalent diseases in many localities of the United States, the mortality in some places reaching as high as 25 per cent of the total number of deaths.

The statistics from the census of 1910 show that over 1,400 deaths occur annually and the distribution so wide that every state save one is included. No one seems to be immune to malaria, the negroes and Indians becoming infected nearly if not quite equally with the whites, but the pernicious types are rarer in the negro. Children are more frequently infected than are adults. Some cases are congenital. Pregnancy predisposes to an attack, when exposed, and the puerperium especially predisposes to malaria on account of the lowered vitality.

The pernicious type is a very severe form of malarial toxemia, and most

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frequently due to infection from the Aestivo autumnal variety of parasites, but I have seen cases I think wholly due to the toxemia developed by the tertian type, and othes to an aestivo-autumnal grafted on a tertian type.

There are several ways in which the disease manifests itself, depending on the susceptibility of different organs, or to the different degrees of intensity in the action of the malarial poison. If the morbid impression falls on the brain, or rather, the cerebral hemispheres, the result is that their function is so far suspended that the patient becoms comatose, either gradually or from the very onset of the paroxysm. This is termed the comatose form, and may occur without any premonitory symptoms. Usually, however, there is a violent headache preceding the attack. The eyes appear congested and may become dilated, respiration irregular and pulse full and bounding at first, but gradually becoming feeble as well as irregular. The condition may last a few minutes, or may last several hours, the coma becoming more profound till death supervenes. These cases may be mistaken at first for uremia, cerebral apoplexy or meningitis, but the clinical history is an aid in making a diagnosis, and a blood examination will make a positive diagnosis.

If the force of the disease falls on the spinal cord or medulla oblongata, as is usually the case in children, there is no coma manifest, but muscular contractions, either tetanic or paroxysmal, the latter being the common convulsions so often seen in children.

In the ALGID form there are no marked muscular contractions and no coma, but instead there is the characteristic coldness of the surface of the body, often a blueness of the lips. Sometimes there is severe gastro-intestinal symptoms, such as vomiting or purging. Usually the vomitus consists of yellowish or greenish bile or it may be grass-green or even bluish in color. Often there is hemorrhage from the bowel and occasionally from the kidneys, a distinct hematuria, in this form of pernicious malaria. Epistaxis is not a rare occurence. Although the surface temperature is subnormal the patient feels hot, in distinction to the chilly feeling experienced in a common malarial paroysm. Often the surface of the body is bathed in a cold clammy sweat, and the skin, instead of appearing cyanotic, seems bloodless. Respiration is rapid, and is usually accompanied by a grunt, groan or sigh. Temperature is seldom high, and may be subnormal. Severe abdominal pain may occur, some cases simulating an acute attack of appendicitis, and others a peritonitis, but more frequently the pain is limited to the gastric region. These gastro-intestinal cases are the ones that are most apt to be confounded with Yellow Fever, and sometimes a diagnosis can only be made by an examination of the blood.

There is a third form of pernicious malarial fever, although usually classed by itself. I classify it in the group with the others because it is distinctly pernicious in effect, is malarial in origin and is amenable to the same treatment. I refer to Malarial Hemoglobinura, Hemoglobinuric Fever, Black Water Fever or Swamp Fever.

This disease always occurs in persons suffering previous attacks of malaria, and generally presents for cardinal symptoms——fever, hemoglo-

binuria, icterus and vomiting. There is usually a distinct chill or rigor, with a moderately high temperature, and during the rigor or closely following it there is a desire to void the urine, which has the characteristic black, or redish-black color, due to the excretion of the hemoglobin by the kidneys, the destruction of the blood cells and the liberation of the hemoglobin being so great that the liver becomes powerless to transform it all into bile pigments. It is estimated that a sixth of the blood cells must be destroyed before hemoglobin is excreted by the kidneys.

At the time of the rigor, or within a few hours afterward, the icterus appears and is usually very distinct, the sclera often becoming as yellow as gold and the skin assuming the color of a pumpkin, and remaining so while the hemoglobinuria lasts, and till the liver is able to take care of the waste matter of the blood.

The vomiting of thick yellow bile appears early and is apt to persist throughout the attack. The liver and spleen are enlarged and each is very sensitive to touch.

Death may occur either from exhaustion, suppression of urine or from cardiac paralysis. The exhaustion may be the result of the tremendous destruction of blood cells, to the vomiting and purging or the hiccoughs which sometimes become markedly severe. Suppression of urine is common and may occur at any time during the course of the disease, even after the urine has cleared, although the usual uremic symptoms are often absent. The heart failure is due to thrombus in heart or large vessels, and may occur even as late as a week after an attack, although the patient may be feeling fairly well.

TREATMENT.

The treatment in all forms of pernicious malaria should have three objects in view, viz, cinchonize, stimulate and eliminate.

To affect the elimination, calomel in large doses stands at the head of the list, and usually it is better retained than any other drug, checks the vomiting to a certain extent and by its peculiar action on the liver and intestinal canal, cleans out the toxic material and at the same time acts as an antiseptic. It is best to follow the calomel with one of the salines. The bowels should be emptied by the use of an enema of normal salt solution. The kidneys should be kept active by the use of plenty of water, but if the vomiting will not permit the drinking of water, a high enema of normal salt solution should be slowly given, or the same kind of solution given by hypodermoclysis.

Stimulation is best accomplished by the administration of strychnine, and if the surface is cold, clammy and having a bloodless appearance it is best combined with atropine.

Cinchonization is most effectively accomplished by the hypodermic injection of a solution of one of the more soluble salts of quinine. Personally I prefer a solution of quinine hydrochloride and urea, but in emergencies I use the bisulphate of quinine. The advantage of the hypodermic use of quinine is the certainty and promptness of absorption, for in pernicious

malaria what is to be done must be done quickly, and many lives have doubtless been lost by being treated with quinine in a manner too ineffective to prevent a recurrence of the paroxysm.

If, after the use of the needle, the stomach will retain quinine, it should be given at the rate of 1 1-2 to 2 grains per hour, but at from 2 to 4 hour intervals, for at least two days, when the amount can be reduced about one-half and continued for three or four weeks. But if the stomach will not tolerate the quinine, or absorption is impaired, the use of the needle should be continued at from 6 to 12 hour intervals, using from 8 to 12 grains, freely diluted, at each injection.

I do not hesitate to use the needle, even with infants, but one should be surgically clean, and even then ulcers will sometimes occur. I always mention to the family the likelihood of ulcers following the use of the needle, but I tell them I would prefer seeing an ulcer rather than a little mound of dirt in the cemetery.

The habit seems prevalent among physicians to use an inunction of quinine and lard on their little patients. I speak of this only to condemn it, for we know that the ordinary sulphate of quinine is soluble in 720 parts of water and when mixed with an oily substance like lard or vaseline it is practically insoluble. LIFE IS TOO PRECIOUS TO TAKE SUCH CHANCES. If you must use an inunction, and sometimes it may be necessary, use one of the more soluble salts of quinine, the bimuriate or bisulphate, in glycerine in the ratio of 1 to 3, or a 25 per cent solution. This being a perfect solution, the osmotic properties of the glycerine will permit it to be carried directly into the circulation.

Besides the specific treatment referred to, symptoms must be met and treated as they arise. Morphine with the quinine is useful in cases where quinine alone is not well tolerated, and is especially useful in the algid type, but in the latter it is better combined with atrophine.

Cool baths are useful and often necessary when the temperature is high, and an ice bag to the head is indicated in the cerebral type. During convalescence a tonic containing iron and arsenic should be given.

THE NECESSITY FOR THE EARLY RECOGNITION OF PERITONITIS.

By G. H. Butler, M. D., Tulsa, Oklahoma.

In speaking of peritonitis I shall confine my observation to acute local or general peritonitis, eliminating that form of inflammation caused by the tubercle bacillus, the etiology symptoms and clinical history of which has nothing in common with the disease under consideration. The action of the peritoncum may be likened to that of the good mother. The abdominal and pelvic viscera to her children. When nothing intrudes on the quiet and serenity of the household, peace, and comfort, and harmony obtains. She gently covers her family in the protecting folds of her own strength, and

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there is no friction, no discord, no unrest. Should one of her children become afflicted she ministers to its wants, soothes its pain, covers its wounds with her tears, enforces quiet, surrounds it with every comfort in her power, and she does it as quietly and as gently as the mother ministers to her first born, but should her household be invaded by an enemy, this pale, thin, delicate membrane, whose appearance so little betrays its hidden strength and power, screams a note of warning, and red with anger, flies to the rescue, and accepts the gauge of battle, with the speed, the strength, and the ferocity of a lioness. Should she succeed in overcoming the enemy she promptly devours him, ejects him through an open door, or seals him up in some apartment of her home, and perhaps crippled and deformed, awaits the arrival of assistance. Failing to overcome the enemy, there will wage a battle, the ferocity of which is unequalled, and ends only when the last particle of her resisting power is gone, and she is overcome in death. As a protector of such fidelity, a defender so prompt, powerful, and vigorous, do you not think she merits your most profound consideration, and is entitled to every assistance in your power to render. Do not ignore her appeals for aid. Her language is plain, her signs unmistakable, if you will only diligently apply yourself to their mastery. The early diagnosis of peritonitis, means so much, a chance to do things worth doing, to aid nature while nature is still able to aid you, and peritonitis is a common disease. The heinousness of the crime of failing to carefully examine every case of intra-abdominal conditions by the physician, instead of prescribing off-hand, is given best by the visits too often, of the undertakers dead wagon, to the local hospital, where too late, the attending physician has appealed to the surgeon to save his patient.

CASE.

A boy seven years old complained of pain in his abdomen, vomited, had fever, and was restless. The family physician diagnosed acute indigestion, and prescribed purgatives, followed by bismuth and opium. I was asked to see the case on the fifth day, the doctor advising me that it was no use, as the boy had locked bowels, and would die, but that the family insisted on another physician seeing the case. An examination revealed diffuse purulent peritonitis, the paralysis of the intestines, accounting for the doctor's locked bowels. Urged by the family I opened the abdomen, without an anesthetic, evaporating large quantities of very offensive pus. Focus of infection was the appendix, which had not ruptured.

DIAGNOSIS.

When peritonitis is caused by wounds, or injuries from without, as some times it is, it is not likely to be overlooked, because attention is directed to that region, but most cases of peritonitis are caused from infection from within. In men the peritoneum is a closed sack. In women the sack opens through the fallopian tubes into the uterus. When you remember that the surface of the peritoneum is about as great as that of the skin, that its capacity for absorption is prodigious and very rapid, that it is a covering of

organs normally containing pyogenic organisms, that there are two open doors in the female peritoneum, that you may have an extension of disease from nearly every organ in the abdomen and pelvis, you will realize the importance of keeping a sharp lookout for this complication. Constant and trustworthy symptoms of beginning peritonitis are as follows, important in the order named: (1) Pain, colicky in character, often rather diffused over the abdomen, increasing in severity, and later localized over the particular seats of infection, (2) Muscular rigidity of the abdominal wall. To those of you who have had a large experience in examining abdomens, there has developed a fine sense of touch, that enables you to detect very slight rigidity, and that sense of touch has often been your advance notice of impending trouble. It is distressing to see a physician trying to elicit rigidity in the same manner that the baker kneads his dough, and failing to detect it until the belly is as hard as the baker's table top, (3) a rising pulse rate. The temperature may remain normal, the pulse never. A quick, sharp, high tension pulse, progressively increasing in its rapidity, is a symptom of much importance, (4) vomiting nearly always present, and it may be overlooked if careful inquiry be not made from the fact that the stomach empties itself without much nausea or effort, and the patient is not impressed with the fact, (5) Constipation is the rule, and if in doubt because of the fact that you do not find constipation, make an investigation as to whether or not your patient has been given purgatives. Other symptoms you must look for are the peculiar dorsal decubitus, wherein the patient seeks to avoid movements of the abdominal muscles, the flexing of the legs, or at least the effort to avoid full extension. The shallow thoracic respiration—shallow early in this disease, not because a descending diaphragm would increase the intra-abdominal pressure, so much, as from the fact that the oblique muscles are attached to the lower rib, and deep breathing tugs at the muscles, which disturbs the peritoneum, producing pain. The temperature is of little value in making a diagnosis. Peritonitis may be said to be a disease of low temperature. In some of the most severe cases that have come under my observation, the fever was never high, and you will often find a severe infection with a normal or sub-normal temperature. A subnormal temperature generally indicates a grave condition, and may be caused, not only by perforation, but by the overwhelming severity of the infection. The blood count is of less value here than in some other diseases. Beginning peritonitis must be differentiated from intestinal colic, in which pain is intermittent. There is no tenderness or rigidity, generally no vomiting.

CASE.

A married woman aged 27 years, who had never had any serious illness, a mother of two small children, complained of colicky pains over her abdomen, vomited, and had slight fever. Diagnosis—colic. Was given morphine hypodermically by her physician within four hours after the beginning of her illness, at 6 o'clock, p. m. Acting on his advice she was given pill cascara compound during the night, and sulphate of magnesia at 6 the next morning. When her physician abandoned hope of evacuating her bowels,

except the lower colon, having exhausted his resources in an effort lasting from 8 a. m., until 1 p. m., I was asked to see this case, being told that the woman was suffering from obstruction of the bowel. The woman was apparently in a dying condition. Her abdomen was enormously symmetrically distended, pulse 140, weak, and thready; respirations 45, and very shallow. She had a temperature of 97. Her abdomen was rapidly opened, with little preparation, in the bed in which she lay, and the most terrific general peritonitis I have ever seen was exposed. Enormous quantities of cloudy serum, and large flakes of fibrinous exudate were evacuated. A few through and through sutures, were tied, and efforts made to save the patient, by hypodermoclysis, the administration of stimulants, etc. The following day, on an undertaker's table, and an examination through the incision, revealed a ruptured appendix. Would the story have read like this had the proper diagnosis and treatment been offered when she first called her physician. Nephritic colic shows absence of abdominal rigidity and the pain is referred to the groin, testes, etc. Urinary symptoms should clear the diagnosis. Peritonitis from gall stones, or gall bladder infections, must be differentiated from ulcer of the stomach and sub-acute gastritis, both of which have characteristic findings that should not be misinterpreted. In intestinal obstruction both have similar symptoms. Both have a paralysing effect upon the intestines, but in beginning peritonitis, paralysis is not absolute. Gas passes, even though there is no fecal passage. In purulent peritonitis the paralysis is absolute. In the male, peritonitis is caused often from infection from the appendix or gall bladder, and do not think either, that your patient must be a fat woman who has borne children, before you can have gall bladder infection, or gall stones. In October last year I saw a boy, aged 4 years, who had been ill one week, and was being treated formerly for typhoid fever. His condition suddenly became very grave, and when I opened his abdomen four hours later, he was suffering from a beginning general peritonitis, the infection coming from an enormously distended infected gall bladder, which had ruptured. Drainage of the gall bladder, together with the proper surgical treatment, saved his life, a result I should not have hoped for had interference been delayed a few more hours.

LOCALIZED PERITONITIS.

What has been said of the beginning of general peritonitis applies to the localized peritonitis. The symptom complex is very similar, the difference in the two conditions being that nature limits the spread of the infection in one, in the other natural processes of defense is overcome by the virulence of the infection, or the low resistance of the patient. How long a localized peritonitis will remain so no man can tell. In milder cases, when the exudate is serum, or sero fibrinous, an inflammation may subside, leaving only the products of inflammation that may be absorbed, or more frequently leaving adhesive bands, that permanently remain. Again the exudate may undergo decomposition, resulting in localized abscess, or if the protecting wall break, a general peritonitis results.

CASE.

A young farmer, aged 22 years, known to have had an attack of acute appendicitis, a few weeks previous, and who was advised by his attendant that there was no occasion to hurry into an operation, was thrown to the ground by a steer he had roped. He was operated upon 54 hours later, when his temperature was less than 97, pulse 135, respirations 40, and it was evident that the end was approaching. With no anesthetic except cocaine in the skin. The abdomen was opened, revealing general putrid peritonitis, which had resulted from rupture of the walled off abscess sack, containing the rotten appendix. Had this man received proper surgical attention, even after he was hurt, there would have been a chance for his life. Diagnosis in this case, with the attending physician, was in doubt, as to whether or not he was suffering from shock, or had ruptured the bowel.

In the female an additional hazard is presented, by uterine sepsis, and gonorrhoea, the two conditions that present us with a vast proportion of our cases of pelvic peritonitis. It is of the utmost importance that vaginal or rectal examinations be made, in clearing the diagnosis of localized peritonitis. Women are treated in great numbers every day, by physicians who are supposed to be men of fair ability, and average skill in diagnosis, for puerperal sepsis, typhoid fever, malaria, liver troubles, etc., when a careful vaginal examination would reveal a localized pelvic peritonitis, the toxins from which are being absorbed in just sufficient quantities to produce temperature. Case after case could be recited, by every surgeon who has had much pelvic work, where these women have been doped, tamponed, douched, and perhaps foolishly curetted for some "uterine trouble," while all the time the patient was suffering of localized peritonitis, often from gonorrhoeal salpingitis. Remembering then, that localized peritonitis may become general, at any time, and without warning, it behooves us to take whatever steps are necessary to protect our patient against a diffusion. General peritonitis shows a very high mortality unless prompt and proper treatment be given. And whether you believe in withholding all food and drink, depending on stomach, lavage proctoclysis, the Fowler position, opium, etc., or whether you prefer surgical intervention, your success will be in direct proportion to the duration of the disease, when treatment was instituted. Illustrating the faculty and rapidity of absorption of the peritoneum, it has been demonstrated, first, I believe, by the Cornell University Medical College, that the injection of pure cultures of virulent, pyogenic, microbes into the peritoneal cavity of rabbits, and blood cultures taken five minutes afterwards, showed the micro-organism circulating freely in the blood. The importance of the early recognition of peritonitis, therefore, is apparent, in that measures may be taken to inhibit the infection while still localized, for if it be allowed to become a general infection, the death rate increases with alarming rapidity, as has been recently quoted by Murphy, of Chicago, who, in speaking on this subject, says that cases operated on the first 24 hours, the mortality is 2 per cent; the second 24 hours, 6 per cent and after 72 hours the mortality climbs to 20 per cent. Comment is unnecessary.

Dr. J. A. Walker, Shawnee, Oklahoma.

That paper was very excellent. I wish the general practitioners of the State could hear it. The matter of early diagnosis of all pelvic conditions is of the greatest importance. If this paper could be read and studied by the general practitioners of the whole State we would not be confronted by the appalling conditions we continually have presented to us. Delayed diagnosis in the gall bladder; delayed diagnosis in pus tubes; delayed diagnosis in appendicitis—ought to be, in the light of present medical science, regarded as almost crimes. If the general practitioners of the State could hear that paper, we would not be confronted by the terrible conditions we are in the hospitals. I think it is a most excellent paper.

Dr. L. B. Oldham, Muskogee, Oklahoma,

The paper brought out some very important things. Peritonitis is not idiopathic, it does not exist except through some channel of infection, either an infected gall bladder, rupture of appendix, etc. If the patient has not so far advanced as to be moribund, I think it best to open the abdomen. Get at the seat of trouble at once.

Dr. Butler, closing:

Oftentimes the surgeon is not called in time to effect a cure. He is often placed in an awkward position. The family is anxious to have the surgeon do what he can for the loved one, but hardly know how to bring it about when the attending physician does not insist upon it.

I think it is no wonder that so many people go over to Osteopathy and Chiropractic, etc., for doctors know so little, they study so little.

EDITORIAL

AS TO THE MEMBERSHIP OF DR. FITE.

We regret very much to note that the name of Dr. F. B. Fite of Muskogee was left off the roster of members of the Muskogee County Medical Society in the June Journal.

On account of Dr. Fite's official position as the President of the State Board of Medical Examiners, as well as his years of constant membership in the Association, and especially on account of his activity in organizing the medical profession in the early Indian Territory days we rectify the error with pleasure and regret that the necessity for the correction occurred.

In the transfer of hundreds of names from the Secretaries reports these errors will naturally occur and it is a matter of congratulation that they are kept at the minimum.

HOT WEATHER AND THE ACUTE ENTERIC TROUBLES OF INFANTS.

No more fitting time can arise for the calling of the attention of the profession to the serious troubles confronting it in this connection than now.

No advance worth mentioning has been made in the last few years in the

treatment of these affections and this being true the treatments found most useful should be emphasized at this time.

As a general proposition food; that is the usual and normal food of the infant and affections of the gastro-intestinal tract are positively incompatible.

Also; as a general proposition an empty intestinal tract has a better opportunity to recover its lost functions than one otherwise.

In these two statements the physician almost always has his greatest trouble and lack of success, either from his inability to enforce his orders, their improper enforcement by the parents or the open hostility of the parents to the apparent starvation of their baby.

The time honored and continuously quoted command to withdraw all food at once is often neglected by the physician himself who may regard the ease of no seriousness. A simple reminder of the quick fatality of some of the troubles should be warning enough; their rapid action in the most skillful hands and surroundings should be enough.

No fixed rule of procedure can be laid down for the government of the affections. Usually prompt withdrawal of food, a thorough emptying of the canal with castor oil, blue powders or small, broken doses of calomel with proper stimulation with brandy places the child in the best condition for treatment; here the procedure varies widely in different hands, each having the same object in view, however.

A combination so far hard to improve is castor oil, opium in some form, preferably the camphorated tincture, bismuth subnitrate and occasionally the astringents. The oil keeps the canal empty, the opium and bismuth are soothing and antiseptic to the injured and irritated bowel. Some food must be given and of such measures brandy, whiskey, barley and rice water and egg albumen are the most efficient, the peculiarities of the child and the action of the food given to be borne in mind in each case. Colonie irrigation is a measure to be used only when indicated and the indications for the irrigation are based on the presence of a toxemia due to retained matter in the intestinal canal or to an inactive canal which soon results in poisoning of the little patient.

Every physician knows these indications and rules of treatment and attention is called to them at this time on account of the tendency of some of us to forget or go seeking in new fields for untried, but much lauded, remedies.

SALVARSAN.

Since this preparation has begun to be used and its action observed on this side of the Atlantic the medical press teems with reports on its use and the effect noted therefrom. It is edifying to note the almost universal approval of the drug.

Of course all the reports at this time can be only partial for not enough time has elapsed to say that the apparent advantages derived from its use are to be permanent in character, but it may be said that it is one of the

most effective drugs ever used in any affection, not excepting antitoxin in diphtheria and similar treatments.

The well known conservatism of the American Medical Profession is observed by the careful manner in which Dermatologists and Syphilographers comment on the use of this drug; a note of protest is advanced in its use in those subjects having pronounced vascular troubles and also against the assumption that one injection is sufficient in all cases. It is advised that one injection be made; its results carefully observed and then if there are no grave contra-indications that it be repeated.

That this drug has for its basic action arsenic and that many people have peculiar susceptibilities and idiosyncrasies to the drug should be borne in mind by those about to use it and the patient should be advised in advance of its character and its possibilities. This is especially true in the smaller communities where one adverse result would not only probably bar the use of the drug there for a long time to come, but would probably have a tendency to seriously injure the physician in that place, of course, very unjustly so. This result occurred in the now well known and lamented cases of tetanus following the use of antitoxin in St. Louis a few years ago; this antitoxin was never antitoxin, but a very highly poisonous product due to mistaken preparation, yet today thousands of the people remember that somewhere, sometime "antitoxin" injured and killed some children, hence their prejudice against its use.

It would seem almost natural that those cases of syphilis advanced to the tertiary stage, especially those with great bony involvement and fixed lesions of the deeper structures would require more of the "606" than the fresher cases and to these cases the prognosis should be very guarded; this guarded prognosis should be made by reason of the fact that not enough time has yet passed to say to a certainty what the ultimate results of the treatment will be, notwithstanding the many brilliant reports appearing daily.

VACATION TIME.

The harder a man works the more surely will he need a rest or change of occupation and this need has resulted in the almost universal vacation of the professional man. It has been observed that "All work and no play makes Jack a dull boy" and if the rule carried out does not necessarily make a dull physician it makes him irritable and peevish and keeps him in a rut.

Men of different incomes can afford different kinds of recreation; those of us who have the money can afford Europe, Georgian Bay, the Rockies or the Northwest, most of us have to put up with the hills of the Ozarks and we seem to thrive on that vacation as much as the man with the costlier trip at command.

Every man should quit work for awhile and take stock of himself.

Do what you think you can best afford to, but quit for a few days. A shady spot, pipe, book and hammock are good and if you have a fishing pole that is some better, but the cream of the matter is rest and a slight

change of scenery. Some of us do well by going north and looking at the Mayo's or other pace makers of the profession; this seems a sensible compromise especially for those who are growing old so fast that they do not have time for both recreation and post-graduate work and such a trip is just as beneficial as the other kind and has the advantage of combining profit and pleasure. A well known physician of the east has a farm he proposes to retire to some day and to this farm he slips away and by a change in occupation fights off for a time the encroachments of nature. It is said that the late Professor Nicholas Senn who was a master surgeon and writer as well and a great traveler, wrote some of his best works from notes and observations made during his numerous trips.

The profession of medicine is an exhausting one to the man who is sincere and attempts to pay the demands it makes upon his store of energy and the conservation of his energy demands a change from time to time so take this change; leave your work in the hands of the newer man in your neighborhood or split time with your partner or co-worker, but by all means take the rest.

ABSTRACTS AND EXCHANGES

THE INCOMPATIBILITIES OF ANTIPYRIN.

Incited by an inquiry of a correspondent as to the safety of a mixture of antipyrin, calomel and sodium bicarbonate, and the scarcity of literature on the subject, an examination was made in the Association Laboratory in regard to this point, and the results are published in the Journal A. M. A., January 28. A mixture was prepared having the following proportions, as in the prescription sent: calomel, two; antipyrin, six; sodium bivarbonate, twelve. When this mixture was treated with water there was left a blue-grey residue undissolved and the solution of a soluble salt of mercury. The composition of the insoluble residue was not determined, but there was evidence that it was largely composed of metallic mercury and unchanged calomel. If the prescription powder be treated with an excess of 0.2 per cent HCl , the above reaction does not occur. With a mixture of calomel and antipyrin alone in water, no reaction appears to take place at once, but if some sodium bicarbonate is added the calomel immediately changes color and the mixture becomes of the same appearance as does the original mixture when treated with water. Preliminary determinations indicated that from one-sixth to one-fourth of the calomel present is converted into a soluble mercury salt. If the entire quantity in the original prescription sent, containing 2 grains of calomel and 6 of antipyrin with the sodium bivarbonate, and divided into twelve powders, should be administered, the patient would receive a soluble mercury salt equal to one-third or one-half grain of corrosive sublimate. The incompatibility will be apparent to any physician who will take the trouble to pour a few drams of water on a small portion of the powder, and that it is dangerously incompatible is shown by the large proportion of soluble mercury salt. If administered in a casule the danger would be

somewhat less, as the gastric acidity would tend to neutralize the sodium bicarbonate, on the presence of which the reaction seems to depend. Since the text-books contain so little definite information on the matter, too much blame should not be attached to those who prescribe such a combination, but if used at all it should only be in the most cautious dosage.

COUGH DURING AUSCULTATION.

The importance of eliciting fine rales in inspiration as an important diagnostic sign in early tuberculosis, is specially emphasized by F. C. Smith, Fort Stanton, N. M. (*Journal A. M. A.*, January 28', who thinks that it is sometimes neglected by the busy physician. If, just at the end of a normal expiration, the patient gives a short, easy but audible cough, a part of the residual air will be expelled and followed instantly by an inspiration, the first part of which will naturally be involuntarily accentuated. The fine rales will be detected by the physician with his stethoscope on the patient's chest, sometimes most prominently in the first part, sometimes near the close of this inspiration. A signal system is necessary between the physician and patient as the examiner's voice will cause vibrations in the stethoscope. The patient may be instructed by saying: "Cough once when I tap you, which may need to be supplemented a little later by: "Do not take a breath before you cough;" occasionally also by the admonition: "Do not swallow after you cough." In exceptional cases it may be necessary to say: "When I tap, blow out your breath and cough." Advice is not usually needed concerning the inspiration following. Occasionally, however, in a thick walled or poorly expanding chest or when a thickened pleura masks the situation, it may be desirable to accentuate the inspiratory sound and one may direct the patient to take a quick breath after the cough. A deep muscle-stretching, rib-cracking inspiration is not needed to elicit rales. Smith concludes by saying: "The physician who looks only for those gross lesions which manifest themselves by dullness, cavernous breathing, whispered pectoriloquy, coarse rales, etc., may err both in diagnosis, when these are absent, and in prognosis when the advent of new areas of involvement are overlooked while the older lesions are under observation. Those who give too much significance to some of the ultra-refined and doubtful physical signs, frequently make the opposite mistake. The amateur may be confused by a dry or hairy skin if he neglects to oil or shave the part, but the same man will elicit dullness over a healthy chest if he percuss it close to a wall, or miss an area of consolidation because he allows his pleximeter finger to bridge two ribs. In fact, if he allows no garment between his stethoscope and the skin and no folds of clothing near enough to move on the chest with squeak and rustle at every inspiration, there is less chance of error in a properly elicited fine rale than in anything else the examiner sees or hears."

PYELITIS IN INFANCY.

Purulent infections of the urinary tract in infancy are by no means infrequent according to J. Brenneman, Chicago (*Journal A. M. A.*, March 4', who estimates that they probably form 1 per cent. of all the infantile diseases

coming under the physician's care. They are unique, however, in being hardly ever recognized in general practice. This is not because the children are not ill or because of the difficulty of diagnosis, which can be made readily with the microscope. He describes the symptoms, which are fairly constant. A female infant becomes suddenly seriously ill with high temperature, and recurring chills, especially emphasized by Thompson as characteristic, are valuable symptoms. Another striking symptom is the extreme pallor which comes on after the flushed condition of the first few days. The other symptoms are those of the fevers in general, though the breathing is sometimes accelerated and a slight cough may be present. There is frequently some indigestion, which may lead to a wrong diagnosis. The disorder generally, however, does not differ so much from other acute infections as to be readily diagnosed from them, but a positive diagnosis is made when pus is found in the urine. Commonly the urine is turbid, sometimes even thick and milky, and pus cells singly or in clumps crowd the field. Goeppert has suggested as a minimum diagnostic standard of from six to eight leukocytes in each field of an uncentrifuged specimen. In some cases, however, there is a bacteriuria, the urine swarming with bacilli of the colon type. In some cases constitutional symptoms are lacking; in others these are present, though there is little formation of pus; but such cases are rare; Summing up the clinical picture, one is struck by the fact that there is no physical sign or symptom pointing positively to the kidney or bladder until we examine the urine. Pyelocystitis is characteristically a female disorder in the infant. Brennemann has never seen a case in a male. Most cases occur in the first year and during the summer months, suggesting a connection with the summer diarrhoea of infants, the shortness of the female ureter being an etiologic factor. From a pathologic standpoint there are two types of the disease—one a pyelocystitis, due to the invasion of the bladder and pelvis of the kidney by a (usually ascending) bacillary infection, the other a pyelonephritis occurring in children of lowered resistance, due to some infection of food disturbance, in which the cortex of the kidney is studded with miliary abscesses and the bladder and pelvic infections of less importance. In these cases it is doubtless of hematogenous origin. Whether this method of origin plays any part in the other type is a question still to be decided. The difficulty of examining urine in infants is a cause of its frequent neglect, but it is important and imperative for a positive diagnosis. Brennemann gives several methods by which specimens can be obtained in very young children and, if necessary, catheterization under proper aseptic conditions may be employed. With experience, however, a fairly accurate diagnosis can be made from the symptoms already mentioned. The ordinary pyelocystitis, which is found in the majority of these cases, has a good prognosis under proper treatment. That of the pyelonephritis is more serious though not hopeless, as there is even then a tendency to recover. The child should be kept quiet, its diet watched and an abundance of liquid given. British authorities lay stress on the alkaline treatment in these cases, while Germans and Americans usually depend on urinary antiseptics to a large extent. Brennemann's practice is to crowd

water in every way, to try alkalies first, and, if there is not early improvement, to substitute hexamethylenamin or salol in doses of from 1 to 2 grains every three or four hours to an infant 1 year old, and to keep this up over a considerable time to prevent relapses, which are likely to occur. The severer cases with cortical abscesses are not much influenced by such remedies. They require treatment of the underlying condition and general tonics and supportives. In conclusion Brenneman reiterates the importance of urinary examination in case of infants with high temperature.

BOOKS RECEIVED

Report from the Pathological Department, Central Indian Hospital for the Insane, Volume Two and Three for the years 1906-7, 1907-8, 1908-9.

Published under the supervision of Dr. George F. Edenharter, Superintendent, Dr. Max A. Bahr, Clinical Psychiater and Dr. J. A. Jackson, Pathologist.

These volumes are more than the usual report of such matters, rich in statistics; but also contain many interesting case reports and papers pertinent to Neurological subjects.

As such they will be found useful to those physicians interested in the subject of Mental and Nervous Diseases.

Practical Medicine Series, Volume Three. Eye, Ear, Nose and Throat.

The Eye, by Casey A. Wood, C. M., M. D., D. C. L. Consulting Ophthalmologist to Cook County Hospital; Attending Ophthalmic Surgeon, St. Luke's Hospital, Chicago.

The Ear, by Albert H. Andrews, M. D., Professor of Otology, Rhinology and Laryngology, Chicago Eye, Ear, Nose and Throat College; Oculist and Aurist to the Chicago, Rock Island and Pacific Railway, etc.

The Nose and Throat, by Gustavus P. Head, M. D., Professor of Otology, Laryngology and Rhinology, Chicago Post-Graduate Medical School.

Series 1911. Chicago, The Year Book Publishers, 180 North Dearborn Street.

A TEXT-BOOK OF MEDICAL DIAGNOSIS

A Text-Book of Medical Diagnosis. By James M. Anders, M. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, and L. Napoleon Boston, M. D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1195 pages, with 443 illustrations, 17 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

WHAT TO EAT AND WHY

What to Eat and Why. By G. Carroll Smith, M. D., of Boston, Mass., Octavo of 310 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$2.50 net.

DISEASES OF INFANTS AND CHILDREN**The New (3rd) Edition, Revised**

A Manual of Diseases of Infants and Children. By John Ruhrah, M. D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. Third Revised Edition. 12mo volume of 534 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Flexible leather, \$2.50 net.

PRACTICAL CYSTOSCOPY

Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder. By Paul M. Pileher, M. D., Consulting Surgeon to the Eastern Long Island Hospital. Octavo of 389 pages, with 233 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

W. B. SAUNDERS COMPANY, Philadelphia and London.

B O O K R E V I E W S

Medical Electricity and Rontgen Rays.

Medical Electricity and Rontgen Rays. By Sinclair Tousey, A. M., M. D., Consulting Surgeon to St. Bartholomew's Clinic, New York City. Octavo of 1116 pages, with 750 illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company, 1910. Cloth, \$7.00 net; Half Morocco, \$8.50 net.

This is a very valuable contribution to the field of Electro-Therapeutics. The work being profusely illustrated and the illustrations being highly pertinent to the subject matter.

This will be found especially valuable to the general practitioner who does electro-therapeutic work, which is often most confusing and the occasion of much experimentation.

Practically one-third of the volume is devoted to the X-Ray and the instructions laid down on this particular phase are concise and plain. The illustrations under this head are partly in color, showing the proper condition to obtain in the work devoted to radiography.

A great part of the work is devoted to the application of electricity as a therapeutic agent and a section is also well illustrated and contains a vast fund of information on the subject of medical electricity.

Of course the work is full of the X-Ray as a diagnostic agent and good sound rules are laid down for its use in the various conditions in which such aid is needed.

The volume may be safely commended as an explicit guide and textbook in its field and as such will be well received by both student and practitioner.

MODERN OTOLOGY. Second edition revised. The Principles and Practice of Modern Otology, By John F. Barnhill, M. D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine; and Ernest de W. Wales, B. S. M. D., Clinical Professor of Otology, Laryngology

and Rhinology, Indiana University School of Medicine. Second edition, revised. Octavo of 598 pages, with 305 original illustrations, many in colors; 1911. Cloth, \$5.50; half Morocco, \$7.00 net. W. B. Saunders Company. Philadelphia and London.

This is an excellent volume, a necessity to the general practitioner and one that should be closely studied and followed in daily work. The tendency of many general practitioners to regard ear troubles as unimportant is so common that all should be on their guard for possible complications, that so often arise and gain great headway before operative interference is had and this volume clearly gives the indications.

The illustrations are very clear and beautiful. The text is sensible and uncomplicated and throughout the work is replete with suggestions for use in the cases met in general work.

In addition to a revision of many parts of the former work there is a most excellent article on acute mastoiditis with the necessary operative work and this article is most clearly and intelligently illustrated.

The author is to be congratulated in placing before the profession a book that the general practitioner can read, digest and follow without being puzzled. It should find its way to the library of every physician.

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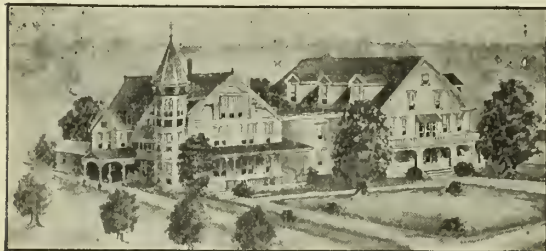
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"EXTRA UTERINE PREGNANCY."

Dr. W. C. Graves, McAlester, Okla.

A fertilized ovum arrested anywhere between the Graafian Follicle and the uterine cavity and developing, there, is termed Extra-Uterine or ectopic pregnancy. This may happen at any portion of the Uterine tube, from its intestinal portion to its fimbriated extremity.

Primarily, extra-uterine pregnancy is almost always in the tube, though it may become abdominal, tubo-ovarian, interligamentous or even uterine in its course of development.

CAUSATION.

Anything which may impede or arrest the fertilized ovum in its progress down the tube, and cause its development, extra-uterine may be given as a cause. They are usually mechanical in nature and may be classed as, obstacles within the lumen of the tube diminishing its caliber, diseases of tubal walls, peculiarities of its anatomical formation and external factors encroaching upon or obliterating the lumen of the tube.

Howard Kelley classifies these as: (a) Tubal Polypi. (b) Atresia of one tube with external migration of the fertilized ovum or the Spermatozoa from the opposite side. (c) Persistence of a fetal type of uterine tube. (d) Diverticula from the lumen of the tube. (e) Torsion of the tube. (f) catarrhal and purulent salpingitis. (g) Myoma uteri. (h) Peritoneal bands

and adhesions, compressing the tube. (i) cervico-abdominal fistula after hysterectomy and perhaps peculiarities of the ovum, such as excessive size, due to twin pregnancy.

He also states that the earlier writers on this subject were greatly hampered in their study of the cause of this condition by the erroneous views they held as the place of meeting between the ovum and the spermatozoa, it being formerly believed that fertilization normally took place in the upper part of the uterus. They held that the antagonistic action of the cilia of the uterine and tubal muscosae was responsible for the condition, believing that the action of the uterine cilia was directed upward, and that of the tube was downward, and that where they met they neutralized each other. This view has been proven erroneous by the observations of Hofmeyer who has clearly demonstrated that the ciliary action in both cases are the same—namely from above downward—and that this ciliary action assists the ovum in its downward course, and also retards the upward progress of the spermatozoa so that were it not endowed with motility, conception would almost never occur. The same writer has shown that fecundation takes place, at least, in lower animals, in the tube Durhessen has found the spermatozoa in the normal tube of a woman three and one half weeks after the copulation, and this he thinks tends to show that the views just expressed may include the human female. With this explanation we see how natural it is to believe that extra-uterine pregnancy is simply a normal conception, with the downward progress of the ovum arrested by some interference either from within or without the tube.

Without going into detail about the why and wherefore of these different causes of tubal pregnancy I will state that persistence of fetal type of tube, Diverticula and inflammatory affections such as purulent salpingitis and pelvic peritonitis are perhaps the most frequent, and tubal polyp the least frequent causes.

“CLASSIFICATIONS”

When the fertilized ovum remains at its original point of implantation it is known as primary extra-uterine pregnancy, and when it changes its position by rupture or what not, it is designated as secondary.

The primary forms are interstitial, isthemic and ampullar. According to Kelley's Classification the interstitial may become

 Entra-uterine

 Abdominal (fetus dies)

 Intraligamentary (fetus dies)

The tubal may become—

 Abortion (fetus dies)

 Tubo-abdominal

 Tubo-ovarian

 Abdominal

 Intraligamentary (fetus dies).

The ovarian may become Abdominal (fetus dies).

Of these forms the Ovarian is the rarest and the Interstitial is of very in-

frequent occurrence. Almost all cases of tubal pregnancy occur either in the Isthmus or in the ampulla of the tube, and are rarely to be found at the fimbriated extremity.

"CLINICAL HISTORY."

When the fertilized ovum once lodges in the tube it goes on developing during the life of the fetus, which may be up to the eighth or ninth month of pregnancy. The first symptoms are those of uterine pregnancy; cessation of menses, morning sickness, enlargement of breasts, enlargement of uterus and discoloration of vagina. A tumor may be found in right or left side which is painful to touch.

The uterus may during the first five or six months cast off the decidua vera which has formed in it either in pieces or as a complete cast. This process is apt to be mistaken for an abortion as it is followed by a flow of blood which may be excessive.

The tumor will continue to grow and will even be noticeable to the patient. Attacks of pain which may be sudden and severe and followed by localized or even by general peritonitis due to rupture of the sac walls and hemorrhage are of frequent occurrence. If the hemorrhage is severe the patient may fall in a collapse and death may follow in a short time. However, in spite of these attacks the fetus may continue to live and grow and if such is the case false labor may set in in the latter months of pregnancy. This is followed by the death of the child, the absorption of the amniotic fluid and calcification of the child.

Generally rupture will occur early in the pregnancy and if the diagnosis has not already been made before it should be made at this time and operation should be performed at once as the early operation is a far less formidable one than it would be in the later months.

Judging from my own experience extra-uterine Pregnancy is a far more frequent condition than might be suspected by the casual observer. I have operated on five cases in the last two years, four of which have been since April 8, 1910.

The operation if done early is simple. The incision should be one inch to the right or the left of the median line and should extend from the umbilicus to the pubis. The patient should be placed in Trendelenburg's position and a large abdominal pack wrung out of hot normal salt solution placed to wall off the intestines. All clots should be removed and the tube and ovary too if involved, should be ligated and removed. It is needless to say that all bleeding should be stopped and the cavity thoroughly cleansed. If this is done no drainage is needed. If drainage is to be used it should be through a stab wound well down in the side and the median wound closed by three layers of buried cat gut and the skin stitched with horse hair or chromic gut. Three or four figure eight silk worm gut sutures extending down to the peritoneum but not through it should be placed as soon as the peritoneum is closed and should be tied last. This makes a nice safeguard against strain from vomiting etc., and as it is said that the good general plans his retreat before battle, so the good surgeon should safeguard against failure.

DISCUSSION.

Dr. John F. Kuhn, Oklahoma City:

There are some things that the doctor said about operation in extra-uterine pregnancies that, I think, are decidedly wrong.

In the first place, immediate operation after rupture is indicated only in cases where collapse is so imminent that you see death staring you in the face. In the vast majority of cases, with care and absolute rest, you will see the patient restored to nearly normal condition. If the operation is done within six or eight hours after rupture, the patient is in a state of collapse, and the operation will hasten death. A very large per cent of extra uterine pregnancies are never diagnosed. The patients recover without operation.

In many cases of rupture in extra uterine pregnancy, the doctor does not recognize the condition. Many cases, after expulsion of the foetus, and blood clots from hemorrhage forms and patients by being kept perfectly quiet in bed, finally recover. The absorption of blood clots and of a large portion of the foetus takes place and nothing remains in pelvis but some adhesions and some slight fetal remains.

The incision should be much smaller, I think, than the one Dr. Graves mentions. I consider that an incision three or four inches in length is ample. Room is needed only to place two or three sutures to control hemorrhage. The blood clots are rapidly removed, along with the foetus and secundines, the cavity is wiped with sterile sponges, and the incision closed without drainage, or, should there be considerable oozing, the tube is left for drainage, to be removed in 36 hours.

Too much work done in the pelvis at this time will endanger the life of patient more than it will be without it.

Dr. Ross Grossheart, Tulsa.

Like all other men I have a little idea of my own in regard to the treatment of ectopic pregnancies. I think early operation is indicated in a great number of cases.

Dr. Gilcreest, Gainesville, Texas.

I have had some experience in ectopic gestation and think there is no routine manner in which cases may be treated. We must treat each case as it individually demands.

If there is a rupture I think it best to operate as soon as possible after the rupture occurs.

We often have patients who will have two or three attacks of severe pain and collapse with same attack of ectopic gestation. They may get up and go around and in a short time have another and sometimes a fatal attack, may bleed to death before anybody can get there. I had a patient who had three attacks, after the third she died before anybody could get to her—severe shock, pain, and fell to the floor dead before anybody could get to her.

I think the method of operation depends entirely upon the point to

which gestation has advanced. In general I believe it is advised by almost every gynecologist now to wait two or three weeks after the rupture before operating.

I had a case in which gestation had advanced about nine months. There was a rupture of the sac and it was about a week after the rupture. We waited a week before making the operation. When we made the incision there was no sac around the child; the placenta was entirely around the uterus. We removed the uterus with the placenta. Cleaned out the abdominal cavity. Patient did fairly well until the next day, when the bowels began to run off and this continued for the next ten days, when she died. A postmortem showed the mesentery of the small intestines had caused gangrene.

Dr. Ament, Sapulpa.

There are only two things to be considered—the cause and effect. The cause is almost invariably infection. Infections come from gonorrhoea, or from infection of the instruments or from the hands of attending physician.

* * * * *

The size of the incision depends upon the case. It is far better, in my opinion, to make the incision large than to have one a little small.

The danger of the patient from hemorrhage and infection are, I think, the points to be considered.

Dr. Haskins, Nashville, Tennessee.

I don't think the matter of infection is so important, but the matter of hemorrhage is important.

* * * * *

With reference to the size of the incision, I think it is owing to the size of the foetus. It seems to me that the median incision is proper. It is easier to close and causes less hemorrhage.

Dr. Callahan, Muskogee:

I think the best time for operation is after diagnosis, prior to rupture. After rupture if it has happened 48 hours before the surgeon is called.

I think the better way is to operate through the vagina, you don't have a second hemorrhage. Of course you do sometimes and have to operate through the abdomen after operating through the vagina.

Very often we don't see these cases until forty-eight hours after rupture and collapse have taken place. Each case is, in my opinion, a law unto itself.

Dr. S. E. Gilcreest, Gainesville, Texas.

I want to say a word about vaginal work. There are many cases where there is a hard mass there and a history of ectopic gestation, the patient having fever, I think these should be opened up through the cul de sac and drained.

I had a patient brought to me, the history of her conception dating to March 1910. In April she thought she had miscarried. In September she had

fever and pain all the time and in the December following was brought to me. She had a temperature of 103 degrees. Uterus pushed up through the pubes. When I opened up the cul de sac, got out a foetus about three and one-half inches long, entirely decomposed, and a large amount of pus.

In recent cases I think it better to go through the abdomen. A small incision in the abdomen will enable one to see what the condition really is.

Dr. Graves, closing.

I absolutely do not advocate vaginal operation in any case. The case cited by Dr. Gilcreest, where the intestines aer walled off, might be a vaginal case, but I don't advocate vaginal operation.

I don't think pain is the cause of shock—I think it is hemorrhage. It is very rare indeed that pain would be severe enough to cause shock. Hemorrhage causes shock.

Some one stated he would do the median line operation instead of at the side of the median. I think we get better results at the side of the median line. We have less danger from hernia.

Dr. Ament expressed my ideas about large incisions. I think a large wound will heal as rapidly as a smaller wound, and there is no more danger of hemorrhage, and I believe in having plenty of room to get my hand in and to see what I am doing.

As to early operation: I figure if the diagnosis has not been made until the rupture has occurred, it should be made. I certainly would not want to operate on a patient who is dying. If I could see patient immediately after rupture and shock had not taken place, I would say operate.

* * * * *

I operated two months ago where a rupture had occurred and there was a general peritonitis. Abdomen was dense and hard. Woman could not bear clothing at all; vomited, etc. We were called on the 28th day of April! On the 29th we operated. Had good results.

UTERINE DEVIATIONS.

Dr. Horace Reed, Oklahoma City, Okla.

We propose to consider in a rather dogmatic way some of the principles underlying the causation of uterine deviations, and their surgical treatment. The term "deviations" as here used, includes prolapse, retroversion, ante and retro-flexion.

Prolapse of the uterus is the direct result of insufficiency of pelvic support. Gravity plays a very minor part. The uterus is an abdominal organ and like the other abdominal organs it depends upon various influences for its position. These influences are variously classified, but they are, chiefly, ligamentous attachments and intra-abdominal pressure. There is no absolute fixation of any of the intra-abdominal organs. The liver and cardiac end of the stomach are firmly attached to the diaphragm, but the diaphragm itself is movable.

Read before Annual Meeting Oklahoma State Medical Association, Muskogee, May, 1911.

The so-called ligamentous attachments of abdominal organs are merely folds of peritoneum between the layers of which the vessels, nerves and lymphatics, take their course. They are ligaments only that they will momentarily limit the distance through which the organs, or parts to which they are attached, may pass. If continuous tension be applied they will stretch indefinitely until such tension is removed. Intra-abdominal pressure is the force which is constant. This pressure is governed by the laws of physics which governs the pressure of liquids and gases within closed cavities. A deviation from the normal causes a simultaneous readjustment of intra-abdominal topography. This pressure is a plus pressure, and when a weak point occurs in the wall of the abdomen the resistance of such point being less than the pressure from within, there results a hernia.

Prolapse of the uterus occurs when the resistance of the pelvic floor is less than the pressure from within. It is simply a hernia of the uterus, through the pelvic diaphragm. The defect is there, and the uterus presents because it happens to be normally located, adjacent to the defect and limited there by its attachments. If the uterus be removed without the closure of the defect which allowed the prolapse, other intra-abdominal organs will prolapse.

To properly treat a prolapse, then, is to cure a hernia. The same rules which govern the surgical treatment of other abdominal hernias must be observed here. There must be, if possible, an anatomical restoration of the disturbed support. The tissue by which the defect is closed must be of that quality which will withstand constant pressure without giving way. Such tissue is to be had only in muscle. The muscles which have to do with that portion of the pelvic floor where uterine prolapse occurs, are the levator ani, and the transverse perinei.

The surgeon who does not utilize these muscles in restoring the perineum, or who, in their absence, cannot get sufficient musculature to close the defect from some other source, will dismally fail. It is not sufficient to restore an imaginary perineal body. Nor is it necessary to dissect up technical flaps. The perineum is no place to practice stunts in plastic surgery for cosmetic effects. A nice appearing skin and mucous membrane closure is all very well, but this alone will not serve the patient six months unless the musculature has also been restored. The manner of approach is of little consequence so long as sound surgical principles govern the operation.

The writer prefers a method which is simple, and does not require denuding. An incision is made along the skin margin posteriorly, from one earuncle myrtiformes to the other. The posterior vaginal wall is dissected from the rectum, by means of probe pointed scissors, until the margin of the levators are reached. These are grasped and united by about two interrupted gut sutures. External to these, the tendinous ends of the transverse perinei are united by the same kind of suture. The skin and superficial fascia are treated, usually, as one layer. The incision when made is transverse, when closed, it is perpendicular. In the absence of the levator ani muscles there is no operation, so far, devised which offers a reasonable hope of cure of the pelvic hernia.

Such conditions are found in women who have frequently given birth to children and in whom the levators, because of repeated trauma, have atrophied. Their absence is also noted in cases of Spina Bifida Occulta, and following permanent injuries of the lumbo-sacral cord. Ventral fixation of the uterus will cure the uterine prolapse and help to support the bladder at least temporarily, but the pelvic hernia will persist.

Watkins, Schauta, and others, have suggested and practiced an operation, to be used only in sterile women, in which the fundus of the uterus is brought through the anterior cul-de-sac and fixed under the base of the bladder, and covered by flaps of the anterior vaginal wall. Following this, the pelvic floor is made as snug as possible by whatever fibrous or muscular tissues may be accessible. This operation was devised primarily to relieve distressing cystoceles.

Tandler and Halbam have suggested an operation in which that portion of the Gluteus Maximus which has its origin at the coccyx is severed from its insertion in the femur, brought forward and inserted in the ramus of the pubic bone. Theoretically this would fulfill the indications, but the large amount of dissection required, and the danger of infection, will probably render this suggestion impracticable for all time.

Ante and retro-version, ante and retro-flexion are purely accidental conditions when not associated with other pathologic lesions. Anteversion is considered normal. The position of the uterus varies within normal limits just like that of other abdominal organs. It represents the resultant of forces acting upon it from all directions. It is situated just so because of the relative positions of the other pelvic organs. The broad ligaments and cervical attachments are ligaments of limitation and will not long support it in any given position. The round ligaments have nothing to do with the position of the non-pregnant uterus. The surgeon who has occasion to frequently look into the pelvis will testify that the round ligaments are always flaccid no matter what the position of the non-pregnant uterus may be. Whereas we formerly supposed that the round ligaments were ligaments of support and that they were factors in the maintenance of the upward and forward position of the uterus, we are now practically convinced that they only functionate in the pregnant uterus, during labor, and that they are factors in helping to hold the uterus down. Autopsies on pregnant subjects show a development of the round ligaments, and this development is in a direct ratio to the advancement of the pregnancy. They reach their highest point of development at full term. Observations made on the uteri of pregnant animals in labor have shown that the structures corresponding to the round ligaments vigorously contract simultaneously with uterine contractions. Following labor they rapidly involute.

To correct a pathological retroversion is to establish a new relation of the uterus to the other pelvic organs, and maintain that relation until the adjustment becomes permanent. This is accomplished by the formation of a new ligament, or the utilization of those present, so that the uterus may be held forward for a sufficient length of time until the new relations have be-

come relatively fixed. For this purpose many operations have been devised. Many of them are good; some are positively bad. Any operation which permanently fixes a uterus, capable of functioning, in any position is vicious. The natural ligaments of limitation of the uterus are the broad ligaments. Any operation which utilizes the broad ligaments or any part of them in correcting a retroversion can establish, at best, only a temporary support. This support, if it persists for a sufficient length of time, is all that is required.

Flexion of the uterus requires very little consideration in so brief a paper. Retroflexion is usually associated with retroversion, and treatment of the version in the manner indicated above usually suffices in the treatment of the flexion.

Anteflexion offers a more difficult problem. With anteflexion there may be a partial prolapse of an elongated cervix. The cervical canal is parallel to the long axis of the vagina and the angle which it forms with the long axis of the body canal is often acute.

The principal symptoms of flexion of the uterus, particularly anteflexion, are dysmenorrhoea, and sterility. In married women it is recommended that anteflexion be treated by a thorough dilatation followed by frequent sounding with the urethral sound, or by the stem pessary. I have never employed the sound but have used a wire loop pessary following the dilatation. Either method should be cautiously employed in married women for fear of interrupting a pregnancy which may take place immediately after the operation of dilating. Pregnancy will produce a physiologic cure of flexion.

In stubborn cases further surgical measure will be required. Amputation of an elongated cervix, or, in the absence of elongation, a resection of the hypertrophied, elongated posterior wall may be necessary in order to relieve the distressing symptoms caused by anteflexion. The latter operation may be performed through vagina or abdomen. The author prefers the latter method for the reason that by this procedure the functioning capacity of the cervix will not be disturbed.

DISCUSSION.

Dr. Fowler, Alderson.

There is little to discuss, but much to commend in this paper, especially the operation suggested on the musculature when uterine prolapse is to be treated.

Dr. W. E. Dicken, Oklahoma City:

The operation that came to my mind was a purely vaginal one, that is, go through the vagina and if we have a retroversion, to pick up the round ligaments and shorten them, and then, of course, do the cystocele operation, if necessary, and it nearly always is so in this condition. If we have elongation of the cervix this can be easily operated at the time, and vagina stitched around the cervix to the commencement of the mucous membrane, after which we do a typical Tait's modification operation for perineorrhaphy, which is to dissect a portion of the posterior wall of the vagina out, that is cut a V shape out of the posterior wall, after the dissection has been made; then place

sutures from above downward until you get to the levator ani muscle, then this muscle is brought together by one catgut ligature, after which a figure of 8 stitch is placed from the perineum to the apex of the triangle, which brings the vaginal vault down close to the perineum, making a much stronger fortification for the support of the uterus.

This operation is one that I think gives less shock than the one through the abdominal route and is just as efficient.

Dr. Reed, closing.

As I said in the beginning, I only want to touch upon the principals underlying the causation of uterine deviation and touch upon their surgical treatment. I have suggested only those operations which in my own experience have proven of most value, therefore I did not suggest the operation referred to by Dr. Dieken in his remarks. The one which I did mention for the condition of complete prolapse in women past the menopause, is the vaginal operation; it is simple in technique, does not expose the patient to any great amount of shock, and is employed by different men in all parts of the world, namely, the Schauta-Wertheim-Watkins operation. From my own experience and observation this operation is to be preferred to all others.

THE PUERPERIUM.

By Dr. Andrew N. Lerskov, Claremore, Okla.

The word **puerperium** is derived from the Latin roots, **puer**—child, and **parie**—to bring forth; one recently delivered of a foetus; or, relating to parturition and all its consequences.

Although the field of this subject and its *modus operandi* have been thoroughly covered and minutely discussed by many of the brainiest men in our exalted profession on many occasions and from time immemorial, yet we find much room for development, and many hidden truths remain yet to be unearthed. The process involves many things not within the realms of internal medicine, including proper diet, hygiene, and many duties embracing the care of the mother and child from the time of delivery to the restoration of all the physiological, and oftentimes, pathological, processes to the normal. I do not seek to present anything startling in order to pose in the limelight, but to be as original as possible, culling out the most important details and facts gained from the bedside of the lying-in chamber.

The definite amount of time covering the puerperal period varies so with different individuals that no definite or fixed rule can be determined. The accurate dimensions of the uterus following delivery cannot be correctly ascertained as they vary according to the condition, size, habits, idiosyncrasies, peculiarities and other phenomena belonging to the individual patient. The process, *per se*, is one of a physiological nature, yet it should be handled by every conscientious practitioner as a pathologic one, as the involution, including absorption, metabolic changes, traumatisms, and the extreme danger of septic infection, should keep a sleepless sentinel on duty at every moment and stage of the rapid cell production and restoration. Nature is lenient

to the mother, the exponent and propagator of all races, and quickly summons all her vital functions to the normal again, after trying ordeals of protracted labors and operative deliveries. No other process or accident as trying and exhaustive as normal labor could occur elsewhere within the body and at the same time be so rapidly and successfully restored. The gain in weight of the uterus during the period of pregnancy, to accommodate the growth of the child, requires nine lunar months, and, reversely, the rapid loss of one-half and more of its weight in a few hours after the expulsion of its contents, is certainly a hastening process and is the indication that is necessarily the criterion for the regaining of the future health of the puerperant. This process can be materially assisted at the outset by observing what is called the "Physician's Hour"—the grasping of the fundus uteri immediately after delivery, and firmly holding it for one hour. This rule, if strictly observed, will permit one to prevent excessive hemorrhage, by pressure on the abdominal aorta, and obtain strong contractions of the fundus uteri. This will expel all the blood clots, shreds of membranes, residual liquor amnii and bacteria. It also closes the gaping mouths of the recently severed blood vessels and thereby prevents materially post-partum hemorrhage, sapremia, septic infection and death.

The administration of the fluid extract of ergot, or any of its preparations, immediately following delivery, is abandoned in my practice unless a severe hemorrhage threatens, and then I prefer giving it hypodermically. This drug seems to stimulate mostly the circulation in restricted muscular fibres of the cervix uteri, instead of the fundus, and acts as a key to the gate of a field full of blood clots and waste material, only to be expelled later by the suffering of what is known commonly as "after pains," and lays one liable to the possibilities of virulent infection.

The process of involution, depends, as stated before, on the rapidity of the loss of weight of the uterus, and is a process of autolysis independent of bacteria, and takes place in an acid medium, the reaction occurring as a formation of sarcolactic acid from muscular activity. We also notice this in health when the vagina secretes an acid that is directly antiseptic to aerobic and anaerobic bacteria. This explains why a sub-involution often follows labor with an anaemic uterus, from absolute inertia, inactivity and lack of exercise. When the process of involution is retarded, say some six or seven weeks, we find as a result an anaemic uterus with no lochial discharge. The uterus is heavy, boggy, and often exerts too much pressure on the already relaxed ligaments and renders the organ prone to any form of displacement. The postpartum chill, which is often encountered with neurotic women, those suffering from anaemia, debilitated conditions, blood dyscrasia, and which often follows rapid and anxious deliveries, is due to a dampening of the body surface with blood, perspiration, amniotic fluid, or by a sudden shock, or relaxation of the high pressure circulation, caused by the loss of blood and decrease in the intra-abdominal pressure from the expulsion of the foetus and its membranes. The condition, per se, is without clinical importance unless it materially disturbs the tripod, namely, the pulse, respiration and

temperature, and is controlled by heat and other measures and means of treating a chill or shock.

After delivery, the umbilical cord should be severed—about one inch in length—to permit sufficient space to be tied with a strong tape which is not small enough to cut the blood vessels thereby sacrificing the life of the infant by a latent or hidden hemorrhage. Some dry, protective, and antiseptic dressing should be applied to prevent the possibility of infection at the point of separation, which is a cause of *icterus neonatorum*, or possibly, some form of peritonitis. A tight band should be placed over the cord to prevent a ventral hernia from the increase of intra-abdominal pressure caused by crying or straining. Credes' method of applying a solution of Nitrate of Silver to the eye should at once be applied to all cases, even the clergyman's baby, on account of the cunningness of the latent gonococcus, which in this age of society whirl may roost in crypts, follicles, and on public toilet stool, until his whiskers are gray. This method will prevent many cases of *Ophthalmia neonatorum*, and will decrease the number of inmates in our institutions for the blind eighty-five per cent. This procedure will not do harm where these conditions do not exist, and will save "the sight of a lifetime" where they do exist. I always carry several empty dram bottles and several papers of the silver preparation, separately and correctly weighed, to make the proper percentage solution. It is necessary that it be made up fresh as it deteriorates with age and, losing its efficiency, will fail to produce the desired results.

The problem of how long to wait prior to delivery of the placenta, varies with different obstetricians. If a severe hemorrhage does not threaten, I wait some thirty or forty minutes in order that the relaxed muscles of the uterus may have time to contract and adapt themselves to their new position, and that the placenta may have time to separate itself from the adherent site or surface of the uterus and chorionic villi. Then, by bimanual manipulation and very slight traction of the cord, instructing the puerperant to strain or bear down as she did in the first stage of labor as soon as a slight pain came on, a satisfactory delivery is usually executed. All its contents and surface should be thoroughly examined to see that all the parts are intact and that no retained membranes are left in utero to cause a *sapremia* and a train of those other troubles that at times follows this neglect.

The infant should always be given its nourishment at regular intervals, but should be put to the breast immediately in order to aid the contraction of the uterus as it is one of the best oxytocics known. In multipara, the attendant nurse should be instructed of the possibility of the baby becoming asphyxiated by burying its nose in the soft, large and flabby mammary gland. The child should be kept on the breast only the first three or four days, and not be given any other form of nourishment, among which are often, burned whiskey, cold water, ramming the butt end of the umbilical cord in its mouth, gunpowder tea, castoria, and train loads of those other combustibles, placebos and edibles, found in the armamentarium of the old midwife or granny. Even if there is not a sufficient quantity of milk in the mother's breast, the child

should be forced to nurse as it removes the colostrum which causes fissured and cracked nipples and mammary abscess. The first few days the colostrum acts as a purgative and an aid in getting the secretions aroused and the bowels started to moving, but after the first forty-eight or seventy-two hours the colostrum acts as a severe gastro-intestinal irritant, and sets up a serious alimentary dyscrasia which should be watched. When it appears, the test of which is well known, the child should at once be taken from the breast and put on a proper modified or artificial milk diet until the colostrum is aseptically removed by the breast pump, and there is a re-establishment of pure mother's milk. The reoccurrence of colostrum should be avoided by refraining from the following conditions and cases: Grief, anger, fear, distress, pain, melancholia, mental aberration, reappearance of menstruation, pregnancy and anaemia.

A question always directed to us by the patient is, how long it will be before she can turn on her side. The rule of assuming the dorsal decubitus for three or four hours, which was formerly thought to prevent air embolism, an anteverted uterus and a lax condition of the abdominal parietes, is not so much the fixed rule as it used to be. I think nature is generous in forming a clot as soon as air strikes or any blood is extravasated from the vessel wall, and acts as a guard to this danger. If severe hemorrhage does not threaten, I always have my patients turn from side to side as soon after delivery as they wish, and I often encourage the carrying out of the rule. The rule of assuming a position on the back for several hours favors astasia from the relieved and engorged blood vessels and an easily displaced uterus. The theory of turning from side to side and of assuming the semi-prone position, as in pneumonia and other pulmonary conditions, applies to these cases. After the delivery is made and all the membranes cleared away, the baby should be laid in its crib, where it should be kept and reared.

If the patient is not completely exhausted, and if too great amount of shock is not present, all laceration, both external and internal, should at once be repaired. It is the most suitable time for such procedure and should not be neglected. In most cases this work can be done at this time without the use of a general anaesthetic since the continued pressure of the oncoming head acts as a local anaesthetic to the severed tissues and the suturing can be done without much pain. Then, too, the tissues approximate themselves accurately and fall back in direct apposition as nature intended, and the danger of septic infection is lessened. However, if this work is not permissible at this time, it should be done within a few days, or as soon as the patient can recuperate enough to allow it. If this work is neglected and repair is not made, atrophy of the mucus membrane and other tissues follow from scar or cicatricial tissue, and the parts cannot easily be approximated. This, then, necessitates an operation of the major class, which, from a consideration of anaesthesia and other dangers, and the matter of fec, and many other items, is very often refused by the patient. Or, perhaps, she has moved from that territory and away from the attendant's jurisdiction and so the "black eye" is our perpetual advertisement and reward.

The patient should be bathed and all soiled linen removed. The room should be quieted for her several hours' rest. Sightseers and anxious neighbors should not be permitted to see the patient until she has time to rest from her recent suffering and the anxiety of her trying ordeal. One douche should be given to drain away all debris and an abdominal and pudendal band should be applied. The bowels should be kept open by laxatives, and the nurse should be instructed to see that she has proper urination. She should be relieved of too much company and from unnecessary noise for a few days until the shock to her nervous system has been overcome. She should receive some massage and light sponge baths, and should be closely watched for the possibility of any complications. As to the time she should remain in bed, authors differ in their conclusions.

Every obstetrician will face disappointment in some of his cases and will be compelled to deal with lacerations of varying degrees, diastases of the recti muscles, and the various forms of displacements of the uterus. Even if he carries out every precaution in his technic and management of the puerperium—rest in bed, proper hygiene, orthopedic appliances, and every conceivable and known prophylactic measure, yet he will not always escape unpleasant sequelae. Yet the small percentage of loss should only stimulate us to obtain better methods for the treatment of the puerperal woman. She should not be given scanty and insufficient nourishment, but should be tendered the best and most nourishing articles of diet the culinary department can afford. She should receive her meals regularly and plenty of them, eliminating, however, knickknacks, indigestibles, or those articles containing more waste material than nourishment, and which must be thrown off by an already sluggish, exhausted and lazy bowel.

The puerperant should be instructed to remain in bed for a reasonable length of time, but to compel her to remain there for weeks is not the proper idea as the relieved activity of the heart and voluntary muscles of the body which have been laboring for two separate systems, interferes with the proper distribution of blood to all vital organs of the body and impairs their functions and duties. Some authorities who are directors of regular maternities have gone too far for the private practitioner in the homes of the town or country. They have advised the rising from bed all the way from a few hours to three or four days following delivery. If we should demand that one of our country puerperants should arise and go about her duties in a few hours after delivery, a battalion of "grannies" from the threshold of every quarter section would instantly be called out to bombard our human anatomy and we would be forever excluded from that neck of the woods. Our names would be heralded from every housetop and "whittling station" of the country churchyard as inhumane and bearing the affliction of mental aberration. Some have advised gymnastic exercise for the patient while yet in bed. We would have to install these necessities by degrees. If we should ask our patient to juggle the os innominatum, or to do the hoochy cooch dance in order to exercise the levator ani muscle or spinetor vaginae, we would be referred to the County Insane Board. For the exercise of the levator ani,

the patient has been advised to make, several times a day, the same movements as she would while trying to overcome the desire to defecate or urinate; to cross the legs and forcibly contract the gluteal muscles and other muscles of the buttocks in order to contract the spineter and raise the pelvis, and by bending the body backward and forward and contracting the gluteal and other abductory of that region to strengthen the pelvic floor. In my mind we lay too much stress on the round and sacro uterine ligaments as the etiological practice for prolapse and displacement. It is true they bear part of the blame, but no gynecologist will shorten the round ligament and leave a lacerated perineum for a displaced uterus. The levator ani and other muscles of the urogenital diaphragm do the most part of the mischief.

These exercises are advised as remedial agents in cases of decensus vagina, or prolapse. Most of the authority is based on observation gathered from large maternities, and from the early rising of the savage, the negro aunty and the Irish biddy who often arose the following day and performed her duties joyfully. It is claimed that it consists in the early usage of all the muscles of the body; that it stimulates cardiac action and circulation, hastens involution, favors defecation, enables urination, thereby avoiding catheterization or over distension of the bladder and decensus of the vagina. The testing of these cases of early and gradual rising by increasing the time spent out of bed each day, up to the third, were with cases who did not develop a rising temperature; those who had suffered severe injuries and had gone through protracted and tedious labors; those who had lesions of the vital organs, severe hemorrhages and gonorrhoea. It was observed by these workers that the early rising after labor increased the body resistance to colds, lessened the dangers of infection, favored the discharge of lochia, and prevented the ascending of vaginal bacteria; favored lactation and prevented embolism. As I have said before, the test of such early rising is yet too young and conclusions too indefinite for a private practitioner to carry out. In some selected cases among the wealthy classes, where we could have them constantly under observation, it might be worthy of a trial; but in most cases we are permitted to make the one call only, riding oftentimes, several miles into the country over rough roads. Often, too, if we allowed our patients the liberty of rising early, limiting her privileges at first to sitting in a chair, she would take further ones and would resume her household duties, labors which have increased since the birth of her child, and early rising would be transformed to early working.

If we could place all of our patients who have gonorrhoea, in bed, we could cure a great per cent of them in a very short time, and we would know that early rising would aggravate the gonorrhoea and a streptococcal and staphylococcal infection, and would spread it into the uterine and peritoneal cavities. It would be difficult for us to exclude the possibility of an infection itself until the third day, and early rising would render the position more serious. We have no means of ascertaining the presence of an embolism or a thrombus, and early rising would prove very harmful toward breaking loose a thrombus that is caused by septic coagulation of blood

from infectious bacteria lying in the intima, or a lymphangitis in the abbe-tia of the effected blood vessel. If we were able to diagnose a mechanical embolus caused by any condition that occurs as a result of a retarded blood flow, early rising would be well as it would favor the distribution of the blood flow, but we are not able to know when either condition exists. It is a fact that we rarely see a puerperal woman until she is in some of the stages of labor. This practice of calling the physician so late should be discouraged as many serious cases of eclampsia and attendant troubles could be prevented were we allowed to have charge of the case prior to confinement, and many of the undesirable sequellae could be corrected. The urine should be actually measured and tested for any abnormality that may indicate trouble. In order to prevent relaxed abdominal walls, we should instruct the pregnant woman to take walks in the open air, to engage in some regular and systematic exercise or sport, to take cool sponge baths in the morning, and to take a hot bath at night in order to relax the nervous system and induce sleep as this is one of the best hypnotics known. She should take proper nourishment in order to prepare the body for the trying ordeal ahead of her, just as one trains for a ball game or any other feat requiring muscular activity and energy. In order to facilitate the act of defecation and urination, she should be taught to practice during pregnancy the emptying of her bowels and bladder while lying on a douche bed pan. The bowels should be kept open by exercise, certain articles of diet, such as fruit and vegetables, and laxatives, if necessary, in order to promote the elimination of the excretions and arouse the secretions.

During labor we should closely observe all the rules of asepsis. We should excavate all the real estate from our finger nails and keep them closely trimmed. The hands should be scrubbed and thoroughly disinfected, and we should limit as much as possible the number of digital examinations. It may be permissible in ward and hospital practice to shave the mons veneris, but in private practice, should we attempt such an act, we would probably be removed by violence. I am of the opinion that we can sterilize the hair as well as any other part of the body, and by so doing eliminate those unpleasant symptoms of pruritus which may cause severe infection from scratching and a very unpleasant sequellae. On account of the close proximity of the anus, a region that is very often teeming with colonies of streptococcic and other infectious bacteria, we should keep those parts separated and sterile as far as possible, as the perineum may become soiled and in this way the whole urogenital tract infected.

The puerpera should remain in bed a reasonable length of time, turning from side to side, and assuming more exercise and privileges gradually each day in order to prevent hypostatic congestion. When she arises from bed the wearing of corsets should be forbidden, but she should be advised to wear a proper abdominal band or binder to support the abdominal parietes. An abdominal binder that will support the lower abdomen with an upward and backward pressure should be encouraged. She should go about her duties gradually, taking a moderate amount of exercise each day until all

her vital organs are able to perform their function and are restored to the normal, and until she is able to correctly rear her offspring and assume her many other obligations of usefulness.

DISCUSSION

Dr. Kuhn, Oklahoma City.

I want to commend particularly that portion of the paper in which the doctor insists upon the necessity of waiting and giving nature a chance. Wait for the indication to use the forceps. It is a trying time for both the patient and the doctor. In the city I never take my forceps. I leave them at the office when I go to a case of labor. If it turns out to be forceps case I know I will have plenty of time to get them. I believe in giving nature a chance.

Dr. Gloss, Pawhuska, Oklahoma.

The paper is exhaustive. I don't believe it is necessary to give the patient a bi-chloride bath. Another thing I don't believe in giving ergot until time is allowed for contraction.

Dr. W. C. Graves, McAlester, Oklahoma.

The paper was excellent. The point about not allowing the nurse to make an examination is to my mind one of the best points. I don't think there is any excuse for a nurse ever making an examination. The doctor should be there to make any examinations necessary.

I believe in firm bandage on patient and then if it is kept tight I think patient can turn over as she may wish.

As to giving ergot before the placenta is expelled—that is against my practice and opinion. The paper, though, is excellent.

Dr. Phelan, Oklahoma City.

The doctor covered a large field in his paper. There is one point I wish to emphasize which was alluded to in the doctor's paper, that is, infection. We have two infections which generally follow labor: Sepsimia and Septicemia. Sepsimia is the result of secundines being left in the uterus, and becoming putrefactive and being absorbed into the circulation. In this case the uterus should be thoroughly cleaned out with a dull curette hot sterile water douche, until you are satisfied that everything is cleaned. Usually the patient will improve at once when this has been done.

In case of Septicemia, there is an infection which has taken place by the absorption into the system of some septic products, through a laceration or an abraded surface. Where you have a condition of this kind, the seat of infection should be localized and first cauterized well, and then treated antiseptically. Large doses of streptococcic serum should be used.

Dr. Haskins, Nashville, Tenn.

With reference to cleaning out the uterus where there is septicemia, I think it is bad practice, if a man has a long finger, to use the curette. I have

known three instances where a man used the curette and in two of them the foetus was expelled the next day.

Our method is to clean out the uterus as well as we can, then introduce male catheter, pack round with gauze, and every two hours use 40 per cent alcohol. This gives excellent results. You must keep the patient on her back.

I think it is a bad practice to give ergot before the uterus is cleaned out.

Dr. G. R. Gordon, Wagoner, Oklahoma.

I have found in a large country practice so much filth and so many unsanitary measures that they are horrifying to think about. I have been places where there were not enough clean napkins to use. I don't think we can be too clean at any time. I think giving the baths spoken of is wise.

In giving ergot I believe in giving 20 minims. A teaspoonful before the placenta is removed. I think it is good practice. I don't want to be understood as a routinist by any means.

With regard to the curette. It may possibly be all right to curette in some instances, but I have never found anything equal to my index finger. You cannot detect things with the curette as well as with the finger. I think membranes and blood clots should be removed with the finger. Often the uterus is damaged—punctured clear through with the curette. So I think it better to use the sterile finger, if possible.

THE PREVENTION AND TREATMENT OF SUPERFICIAL INFECTIONS

By E. H. Troy, M. D., McAlester, Okla.

The prevention and treatment of superficial infections obtain importance from the fact that we will see these cases many times where we will be called to a case of major surgery once; that lives can be saved, amputations prevented, and many deformities avoided, by the early and judicious treatment of these infections.

In the development of modern surgery the use of antiseptics preceded asepsis, and likewise anti-septic dressings were first used in the treatment of superficial infections for the purpose of inhibiting the growth of the infection. But the untoward action of the anti-septics, by lowering the resisting powers of the tissues were often more injurious than beneficial. We have learned that it is the absorbed toxin and not the local infection, per se, that produces the alarming clinical conditions. And also in the struggle between the invading infection and the resisting power of the tissues, it is the virulence of the toxin that is the deciding force.

Under certain conditions one of the functions of certain of the leucocytes is to attack and incorporate bacteria. The conditions leading to this phagocytosis have been fully worked out by Metschnikoff. He has amply demonstrated that if an animal is inoculated with living microorganisms in a very few hours phagocytes are discovered filled with bacteria. Now, if one of these cells filled with bacteria is isolated and placed in a hanging drop culture it will be found that the culture medium will kill the cell and

with favorable environments the bacteria will germinate in a normal manner.

In certain acute diseases there may be abundant phagocytosis and the disease progress in spite of it. It would seem that in these cases the toxine produced by the incorporated organism was sufficiently powerful to overcome the phagocytes and destroy them. In other less acute diseases the bacteria in certain stages may be found within the cells and rarely in the lymph spaces. In these conditions they appear to be almost parasitic.

The process of inflammation is essentially the endeavor on the part of the organism to promote the migration of leucocytes and to aid in the inclusion and destruction of the irritant. Inflammation is to be regarded on the whole as a phagocytic reaction of the organism against the infection, and is the all important factor in the inflammatory process. And, if we can remove the toxine without lowering the vitality of the tissues phagocytosis will do the rest. All deleterious toxins are soluble in lymph, otherwise they could not be absorbed into the general circulation and produce constitutional effects. This quality of solubility enables us to extract from the tissues these toxins, thus preventing their absorption.

In 1877 VanHoff announced the discovery "that the interchange of substances in solution takes place according to the same laws as those applicable to the diffusion of gases, namely, the osmotic pressure corresponds entirely to the tension of the gas." Accordingly if we apply a wet dressing so covered with oiled silk as to prevent evaporation we will establish a negative pressure over the affected area and surrounding tissues. If this dressing is of lower specific gravity than lymph, water for instance, we will increase this negative pressure by the difference in their specific gravities. This dressing will produce an exosmosis so rapid as to cause the tissues to shrivel in a very short time. And, if the treatment is begun before the devitalization of the tissues has taken place, that is, while they are still physiologically active, the relief is almost instantaneous.

We should not incise an infected area as a means of treatment. If pus has formed before we see the case, it is better to apply the dressing for sufficient time to deplete the tissue before evacuating the pus unless the pus is near the surface. The tissues forming the walls of the pus cavities are so changed that absorption is slow, but the absorption through the incised surface is so rapid as sometimes to cause a chill.

This paper is the result of six years' observation in Mercy Hospital where the cases treated were under my constant observation.

DISCUSSION

Dr. J. R. Phelan, Oklahoma City:

I enjoyed Dr. Troy's paper. While it seems to be on a trivial subject, it is a matter that requires a great deal of care to prevent more serious results. A small infection that seems trivial at first may, if too much surgery is done it, cause the patient to lose his life. Rest and hot applications may reduce the toxin in his system.

I remember several years ago while attending clinic in hospital, a student got his finger cut in the morning and the inflammation was allowed

to extend half way up his arm. When he was brought to the hospital in the afternoon we put him to bed and hot applications were used; he was kept quiet and recovered. If these small infections are opened the infection is not always reduced. I think hot applications and rest are great agents in these cases.

Dr. Clark, Cherokee:

Dr. Troy's paper was more on prevention of infection than on curing infection. I heard a paper by Dr. Ochsner of Chicago on the same subject. Some of these small wounds become infected from the instruments used for operation.

Just three months ago I saw a man who had been injured by a barbed wire and in three hours the man had a temperature of 105 degrees. He was already infected. In all these cases it is my custom to use streptococcic serum. We get better results from the use of this serum than if we treated them just locally.

Dr. Troy, closing:

First. The use of serum. Serum is of two kinds, anti-infectious and anti-toxic. Antitoxin is produced by injecting animals with toxin and continuing the injections until

When you use antitoxic serum you will neutralize the toxin in the system—this can be used at any time during infection.

Anti-infection serum must be used early because it works on the infection and not on the toxins. Streptococcic serums are all of that kind, they are anti-infectious and not anti-toxin.

This paper was read for a purpose and I made it short. I have not incised a wound for some years. I began by using hot poultices.

I do not believe in out door clinics. You cannot tell about patient.

Two years ago I began the use of plain water instead of boracic acid as a dressing. Now if infection has gone so far (indicating an area) and you apply this dressing of plain water, covered as indicated in paper, and you have pain before applying this dressing, inside of two minutes the pain is relieved.

These are superficial infections. I have had cases in Mercy Hospital that I have treated according to this method and with good results.

If pus has formed before you see case, do not incise unless the pus is so near the surface that you can

This used to be called a pyogenic abscess. By application of water you establish a negative pressure. If pus has formed, put on dressing as far as infection has gone. Continue the water treatment and the pus will evacuate. What you want to do is to begin an exosmosis as soon as possible. Medicine and drugs and antitoxic serum will not have any effect on an infection that has already begun. Try it and see.

EDITORIAL

ESSENTIALS IN THE TREATMENT OF FRACTURES.

A recent symposium on Fractures in the *International Journal of Surgery* emphasizes certain features in the treatment from the modern viewpoint that it may be of interest to note the points here.

Fractures we have had since man has been, and we will continue to have them long after the ingenuity and knowledge of man has made typhoid, syphilis and pellegra so far back in medical history that their previous existence will be disputed. So it behooves us to pick up every helpful fact on the subject that is productive of more mortification to the profession than all other subjects combined.

The diagnosis of fracture is often not made because the attending physician relies too much on the old rules of determination. In all cases an attempt should be made to make the diagnosis on the physical aspects and then reinforce the conclusion with the X-Ray, if possible.

The reduction of fractures is often thought to have been attained when a radiograph shows the case not reduced. The proper treatment of fractures is often consummated thoroughly when reduction is accomplished. This sounds almost heretical, yet it is the opinion of many authorities that certain fractures reduced require almost the original force to displace the broken surfaces. In other words the importance lies in reduction and not in the dressing to the extent it is often carried out.

The presence of pain after a fracture is reduced, barring, of course that usually present for a short time, very often means that the reduction was either not made or has become displaced and the condition should excite the suspicions of the physician at once and cause him to investigate the fracture.

Another class of fractures require absolute reduction and then a dressing that will retain the reduced bones in proximity; this is especially true in fractures of the elbow and hip; two fractures often met and often followed by deformity, dissatisfaction of both patient and physician and consequent criticism by patient and his friends.

The modern plan of treating these cases is to reduce them if possible under anesthesia, then investigate with the X-Ray as often as deemed necessary. If the fracture heals under the treatment all good and well, but if not, as is often the case, operative interference should be insisted on and if refused the physician is relieved of his part of the responsibility. The brilliant results of operative reduction by Lane plates and fixation by steel drills deserves emulation by all physicians; contrary to the general opinion of the general practitioner the results in this class of work is much better than was formerly thought. It is not necessary to have the plate remain, its usefulness has been wrought when the bones have been approximated long enough for union and when that occurs the plate may slough and be removed or remain quiescent. Of course strict asepsis should be observed in the treatment.

In many fractures it seems almost impossible to hold the ends in apposition and in these cases operative interference is necessary and the physician

who fails in this particular may be justly criticised.

Anesthesia for reduction is practically a necessity in nearly all cases and for several reasons; the pain of reduction is overcome, the rigidity and spasm is reduced to a minimum and the necessary manipulations can be prolonged to the satisfaction of the surgeon to a much longer period of time. It should be used unless positively contraindicated.

About joints fractures are often followed by stiffness not on account of the fractures per se, but by reason of long immobilization of the joint and the fixation of it by adhesions. Theoretically this ought to be avoided by an early removal of the dressing and constant massage and passive motion.

Plaster of Paris is much more useful in fracture treatment than is appreciated. It may be applied after reduction, a picture of the parts made and allowed to remain if proper. The cast may be easily cut open if swelling occurs or even if it does not occur, but is feared; the cutting does not interfere with the fit in any way and it may be removed carefully and reapplied after inspection and massage. With a cast properly applied the patient may be allowed more freedom than otherwise and this results in a happier and speedier convalescence.

THE LOS ANGELES MEETING.

This meeting will go into history as being one up to the usual standard in scientific accomplishments with the added lustre of having the most lavish social and entertainment features ever presented the Association by an entertaining city.

Los Angeles should be named the gem of the Pacific; nature has made her the recreation ground of the idle rich and the seeker after health and contentment, has given her a practically limitless sunshine, an equable temperature, on one side the mountains and on the other the placid Pacific. Given these qualities and a population that has for its sole object seemingly the entertainment of the visitor and new comer it is nothing remarkable to a Californian that the visitor is amazed at the extent and rich character of their receptions and hospitality.

From the arrival of the physicians and their families until two days after the official closing of the meeting the physicians and citizens of the city exerted themselves in making the meeting one of pleasure and profit and the exact and easy manner in which the various stupendous entertainments were staged is evidence of their familiarity of such matters and the great care taken to make this meeting the success it was.

The ladies of Los Angeles most hospitably entertained the visiting ladies and every day was one in which it was the task of the visitor to decide just which entertainment to partake of and the same task fell upon the physician.

Probably the most important act of the Association in a business way was the reappointment of a Committee to devise plans for the creation of a system by which every member of the State Association should automatically become a member of the American Medical Association. This was one

of the strongest recommendations of Dr. John B. Murphy, the President, and has long been under contemplation by the leaders in organization work and is the ultimate end of the plan as first adopted looking toward the organization of the Medical Profession. The plan would result in some little loss of revenue so far as the Journal is concerned, but the managers of that publication think the Journal is abundantly able to take care of itself in a business way and that the added interest and impetus given the organization by reason of the fact that all members were also members of the National body just as the county member is today automatically a member of the state association would more than make up for any loss of subscription as a result of duplicate copies going to firms or to members who would not desire it.

Some important changes were also instituted in the Constitution and By-Laws, which in due course of time will be referred to the constituent state associations for appropriate action.

The eminent New York physician and authority on children's diseases Abraham Jacobi, was elected President for the coming year over Dr. Walter B. Dorsett, of St. Louis and Dr. J. N. McCormack of Bowling Green, Ky.

Those attending the meeting were unanimous in their praises of the manner in which every detail was conducted and will carry with them the most pleasant remembrances of their trip.

THOUGHTS FOR THE ANTI-VIVISECTIONISTS AND PREVENTION OF CRUELTY TO ANIMALS SOCIETY

SPARE THE FLIES

Oh, swatter, hold your hand, I beg, and do not slay that humble fly that tickles you with active leg—why should the lovely creature die? The Force that gave you life and breath designed that fly, so blithe and gay; who gave you powers of life and death? Who said that you might freely slay? Because some scientists insist that flies bear germs from place to place, you take a bludgeon in your fist and would exterminate the race. The germs and flies have equal rights with men enjoyment to pursue, and so have skeeters, which, at nights, oft charm us with their loud bazoo. I hold that any living thing has title deeds as good as ours, to loaf around this world and sing, and sip the honey from the flowers. And when I see some husky guy take lethal arms and fiercely pounce upon some unsuspecting fly, that does not weigh a half an ounce, I feel that I'd set up cigars, or buy the lime juice by the tub, if some big monster came from Mars, and soaked him with a twelve-foot club. When next you go to swat a fly, imagine that the monster came—some freak a thousand cubits high, and held a club above your frame!

WALT MASON.

SUMMER MEETING OF THE CENTRAL OKLAHOMA MEDICAL SOCIETY

The Summer meeting of the Central Oklahoma Medical Society was held at El Reno on the afternoon of July 11th. Upwards of thirty phy-

sicians were present and took part in an unusually interesting program.

This society meets four times each year and serves as a means of bringing together the men practicing in the Central and Western portions of the state frequently enough to keep in touch with each other and is of great value as a means of exchanging ideas and of presenting rare or unusual case reports.

It is one, if not the oldest and most successfully conducted district societies in the state and is composed of enthusiastic Association men who realize the helpfulness of such meetings as this Association affords.

At the close of the afternoon program the profession of El Reno provided dinner for all who were in attendance, serving the same at the Southern Hotel.

The next meeting will be held on the 2nd Tuesday in September, probably at Chickasha.

MEDICAL ASSOCIATION OF THE SOUTHWEST

Great preparations are being made for the Sixth Annual Meeting of the Medical Association of the Southwest, which will meet in Oklahoma City, Okla., Oct. 10, 11 and 12, 1911.

The Association will have present as its invited guests, Dr. A. R. Edwards, of Chicago, Ill., who will deliver the oration on Internal Medicine and an officer from the Public Health and Marine Hospital will be specially detailed to attend this meeting to present a paper on some topic of public interest.

The Secretary has made application for reduced rates on all railroads and the profession of Oklahoma City are planning great things for the members attending; and these things with an unusually strong program should attract a larger attendance than any former meeting.

BOOK REVIEWS

PRACTICAL CYSTOSCOPY.

Practical Cystoscopy and the Diagnosis of Surgical Diseases of the Kidneys and Urinary Bladder, by Paul M. Pileher, M. D., Consulting Surgeon to the Eastern Long Island Hospital. Octavo of 398 pages, with 233 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

W. B. SAUNDERS COMPANY,
Philadelphia and London.

The last few years has shown a wonderful advance in the diagnosis and treatment of bladder, ureteral and kidney affections and the success of this branch of surgery and diagnosis is due to the perfection of the cystoscope.

In the work produced by the author, which consists of eight parts the indications for cystoscopy are given; the technique of the processes with a

fine description of the various foreign and American instruments used and a discussion of their relative merits and fields of usefulness is made.

Considerable attention is given to the diagnosis of the different pathological conditions of the urethra, bladder, ureters and kidney.

A chapter is devoted to the therapeutic use of the cystoscope in making topical applications, illumination of the bladder for the purpose of surgical work and direct treatment of affections of the kidneys.

To those who care to perfect themselves in the treatment of the above conditions this book will be found most useful. The language is clear and the illustrations are very good and the color plates are masters in their class.

Naturally the technique of the examination is fully considered and this is a most important phase of the work, neglect of any part of which tends to cloud the issues to be determined, as well as doing possible damage to the patient.

GONORRHEA IN THE MALE, by Abr. L. Wolbarst, M. D., New York, Consulting Genitourinary Surgeon, Central Islip State Hospital; Visiting Genitourinary Surgeon, People's Hospital, West Side German Dispensary and Beth Israel Hospital Dispensary; Professor of Genitourinary Diseases, New York School of Clinical Medicine; Member of American Urological Association, etc., etc.

Published by the International Journal of Surgery Publishing Company, New York, 1911.

The publishers call attention to the following points in this monograph of 175 pages as worthy of consideration:

1. It is written especially for the general practitioner and is not intended for the specialist.
2. It is not a text-book--but a guide to the diagnosis and treatment.
3. It is not a rehash of other books that have been written in the past, but is based entirely on the large personal experience of the author. Discarded methods of diagnosis and treatment are mentioned only to be condemned.
4. It is a book of facts, and not of theories.
5. Special emphasis has been placed on the diagnosis of gonorrhea in its various stages. All the known methods of diagnosis are described in detail, and illustrated wherever possible.
6. Differential-diagnosis has been given a prominent position in the text. The author believes that a correct diagnosis is more than half the battle won.
7. The treatment is based on the most modern practice.
8. Nothing has been accepted as granted but what has stood the test of experience at the hands of the author.
9. The teachings are absolutely up-to-date in every particular.
10. Special attention has been devoted to the curability of gonorrhea, with reference to its influence in marriage and in the sexual neuroses.
11. The author presents this little work as a plea for more gentle

and conservative methods in the treatment of gonorrhea. We quote from his preface: "He believes that considerable damage is being done by the prevalent methods of treating gonorrhea, particularly in the respect of our remedies being too strong, and being used with a vigor that is far too heroic for the delicate and inflamed tissues to bear with impunity. If this work will be accepted as a plea for greater gentleness and conservatism in our therapy, not only as to drugs we employ, but also as to the instruments we use, as well, it will have accomplished all that the author could have hoped for."

INTERNATIONAL CLINICS, Volume Two, Twenty-First Series. Edited by Henry W. Cattell, John H. Musser, Frank Billings, Chas. H. Mayo and other eminent American and European authorities. Bound in Cloth. Price \$2.00 net; J. B. Lippincott Company, Philadelphia and London.

This practical work is in keeping with its predecessors in its richness of production and scope of subjects considered. Among the important contributions noticed is one on the Diseases Produced by the *Bacillus Coli Communis* in the Intestines, by Fenton B. Turck, M. D., The Progress of the Tuberculosis Campaign in Pennsylvania up to 1911, by Lawrence F. Fliek, M. D., Intravenous Administration of Salvarsan in the Treatment of Syphilis by B. A. Thomas, A. M., M. D., this article being finely illustrated by plates, one in color.

The volume also contains many other practical contributions too numerous and varied to describe here, but thoroughly in keeping with the high-class maintained by the Editors heretofore.

PERSONAL NEWS

Dr. J. M. Byrum of Shawnee is spending the summer in New York doing post-graduate work.

Dr. Robert H. Riley of Oklahoma City and Miss Willie Sloan Harris of Shawnee were married June the eighth at Shawnee. They will make their home in Oklahoma City after July first, at 701 West 30th street.

Dr. W. L. Kendall of Oklahoma City is in Chicago taking in the hospitals and clinics of the city.

Dr. Leigh F. Watson of Oklahoma City is spending the months of July and August in the clinics of New York, Baltimore and Boston.

Dr. J. L. Blakemore, City Superintendent of Health of Muskogee, is making an inspection of the garbage disposal plants of various Western cities preparatory to the installation of a plant in Muskogee.

The firm of Drs. Standifer and Tedrowe of Elk City has dissolved. Dr. Tedrowe announces that his offices are in the State Exchange Bank building.

Dr. F. B. Fite and family are in North Carolina for the summer. Dr. Fite will attend the clinics in Baltimore, Philadelphia and New York.

Drs. Melvin and Melvin of Guthrie are organizing and have begun operating a hospital for the treatment of tuberculosis in Guthrie.

Dr. J. Hutchings White of Muskogee is in Rochester, Minn., and the

East looking into the clinics.

The Board of Trustees of the German Hospital, of Kansas City, have set apart one floor of their new fire-proof and sound-proof building for a maternity service and nursery. Modern equipment is being installed throughout. Dr. Geo. C. Mosher has been elected Obstetrician and Director of the Department. Dr. Frank C. Neff will be the Pediatricist for the Hospital.

AGAIN THE HAY FEVER PROBLEM

Whatever else happens, or fails to happen, here is something that always bobs up at the appointed time. Taxes are not more certain and insistent. Sooner or later every physician has this problem to solve. The trouble is, it doesn't stay solved. The long-looked-for hay fever specific has not yet arrived.

Undoubtedly the most successful way to treat hay fever is to send the patient where he will not be exposed to the particular pollen to which he may be susceptible—to prescribe a sea voyage, for instance, or a change of climate. In this manner temporary immunity, at least, is obtainable. Unfortunately, very few patients, comparatively, have at their disposal the necessary time and means for travel. In nineteen cases out of twenty the physician must fight the intractable disease with such weapons as pharmacology and pharmacy have placed in his hands.

Of the remedial agents in the possession of the medical profession the suprarenal substance has proved itself by far the most efficient. While not attaining to the dignity of a specific, it is at least a satisfactory palliative. It successfully antagonizes the symptoms of the disorder and gives the patient a temporary comfort that is not to be despised. It is probably best used in the forms of Adrenalin Chloride Solution, Adrenalin Inhalant, and Anesthone Cream.

The two preparations first named—the former diluted with four to five times its volume of physiological salt solution, the latter with three or four times its volume of olive oil—are sprayed into the nares and pharynx. Any good atomizer that is adapted to oily or aqueous liquids (preferably, however, one that throws a fine spray) may be used. As to the comparative value of the preparations for the purpose named it may be said that the Solution "takes hold" more promptly, while the astringent effect of the Inhalant is more lasting.

Anesthone Cream is a much newer product, having been introduced to the profession, if we mistake not, in the early months of 1910. Nevertheless it made a great record for itself during the hay fever season of last year. Few medicinal preparations, indeed, make their debut so auspiciously. The formula came from a prominent practitioner of The Hague, Holland, and combines Adrenalin Chloride and Para-amido-ethyl-benzoate in a bland oil base. Right here some reader may inquire: "What is Para-amido-ethyl-benzoate?" Ask Parke, Davis & Co. They have printed matter which answers this very question. Write for it. Write the company, too, for its literature on hay fever, addressing your request to the home offices in Detroit, Mich., and mentioning this journal. You will get some useful and interesting information.

ABSTRACTS AND EXCHANGES

THE TEMPTATIONS OF THE LOCAL MEDICAL EXAMINER IN MAKING LIFE INSURANCE EXAMINATIONS.

By Joe E. Dilby, M. D., Lampasas, Texas.

From Texas State Medical Journal of Medicine

Temptation is a recognized opportunity to do wrong, for temporary benefits, immoral indulgence or fleeting pleasures. "Temptation is a fearful word, it indicates a beginning of a series of possible evils, it is the ringing of an alarm bell whose melancholy sounds may reverberate throughout eternity, 'tis a fearful thing to think of, that in every heart there is some secret spring hidden, that is too weak to withstand temptation."

I have been tempted. I have seen the day when a dollar bill looked like a block of stock in a new life insurance company. I have been so poor that when the hash-gong rattled I couldn't go. I have been offered \$100 for a simple twist of a uterine sound when I was buying my smoking tobacco on credit.

Emerson on legal medicine says that the local examiner is the agent for the company and not for the solicitor or the applicant; he is employed to do a certain piece of work for the consideration of so much money. Now, that is the plainest statement that was ever written; every doctor here understands it. Then why is such a subject as "The temptation of the local examiner" necessary? Because human nature is frail, and morality is still in her swaddling clothes. The doctor is the agent for the company; he understands that while he is getting his appointment, but after this brief formality the moral influence of the company ceases, and the baneful influence of the solicitor and the applicant commences. The doctor is left in the presence of the enemy continually; his employer is never in sight. I can illustrate the situation best by telling of an experience I had with a railroad conductor twenty years ago. When I came to my destination, the thought presented itself to my mind to ride out the balance of that particular conductor's run. I called him to one side and approached him on the subject of a ticket. He said he guessed I needn't get one; I could just pay him the six dollars. I looked him straight in the eye and said: "Captain, I will help you steal it for half of it." He said, "Alright, bud; I can haul you a damn sight cheaper than the Company can." Gentlemen, that is the idea exactly, the enemy is always on hand, the moral influence of the Company never.

The agent comes to see the doctor the first thing when he hits town, and spansks said doctor into taking a small policy for the benefit of his wonderful influence on future business. The smiling, affable agent tells of a fool doctor he had down the road, and he hopes that his new found acquaintance won't give him the same trouble, in being so all-fired particular about his examinations. The doctor smiles under the hypnotic influence of the agent's pleasing personality. The agent sallies forth. Finally he ties on to a victim, and here they come. It is easy to see this new applicant can hardly pass for life insurance. The agent excuses himself, and leaves the doctor alone with the applicant, who has a say "a-comin'." He tells of a policy he contracted for last year, and had he gotten a sure enough doctor to examine him, instead of Dr. Muttonhead, a competitor, he wouldn't have been turned down like he was. The company not there, the agent and the applicant always there. It takes a diplomat to please an agent and an applicant on a turned down policy.

I was asked by a diabetic once to doctor up his kidneys so that he could get life insurance. I refused to do it, of course, but he got his kidneys treated with one doctor, he got his insurance policy through another unsuspecting doctor, and I saw his family collect the insurance money. Another time I was asked to write a death certificate stating that a mother

died with "stomach trouble," instead of consumption, for the express purpose of life insurance for the surviving sons. This I wish to say, people who should not have life insurance, because they are undesirable risks, give us most of our temptations.

A doctor should be a good judge of character, and when he believes an applicant is padding his family or personal history, he should insist on his telling the truth, the whole truth and nothing but the truth. Should this instance fail, the suspicion should be reported to the company; but we are tempted not to do it, for it makes more work for the same price.

It is the universal opinion of organized medicine that five dollars is the right price for life insurance examination, and many counties have enforced this standard. If I understand it right, all Texas companies have complied with this request; in fact, they have never offered anything less. I believe this is a fair remuneration, and I think it behooves us as general practitioners to honestly earn the price we have demanded; yet, some of us, I am sorry to say, do not make good examinations. One medical director reports that he once received six applications from the same medical examiner in one week, and that the urinalysis showed precisely the same for all six of them. Now, that doesn't sound good.

We are asked by agents and applicants to write plain, bare-faced lies above our signatures. I had just as soon place my right hand on the Holy Bible, before the highest Court in this country, and with my eyes turned toward Heaven, then and there perjure my soul, as to write a lie above the name my father gave me. Agents like for us to be easy, and where there are two examiners, the one getting the highest percentage accepted gets the agent's influence. We all know it makes a difference in an honest man's answers to certain set questions, whether he wants a government pension or life insurance policy. For this we make allowance enough to paralyze truth with despondency, but we should not be tempted to make the difference stagger Ananias into being just a commonplace liar.

Carelessness in Examination.

Some doctors write like ignorance personified. Their chirography looks like a drunk beetle bug had fallen into a dye pot and crawled out with a case of delirium tremens. Slovenness, carelessness and poor handwriting can be overcome by a little painstaking diligence.

It takes all kinds of patience to be pleasant when one runs across an applicant who does not know his own brothers and sisters. "How old is your father?" "Damn 'fi know." "How old is your mother?" "She's younger than pa." "What did your sister die of?" "Change of life." "How many brothers have you got?" "Four, countin' myself." "Ages, please?" "Well, Bill, he's the oldest, but he's dead. Then my sister was born jest before I was born. If I had the old family Bible I could tell you, but Sam has got it, he's the pious one, you know." The temptation is to take little pains with this kind of an applicant.

The personal history gives trouble, also. You will find one applicant who greatly overestimates all diseases that he has had, while another appli-

cant will endeavor to hide every accident, physical imperfection, or disease that he may have had. The temptation is to pass such questions carelessly, because it takes trouble to arrive at the truth of the matter.

In the physical examinations life insurance dividends take a tumble, if the local medical examiner follows in the way to which he is tempted. Matthew, 6:13, says: "Bring us not into temptation, but deliver us from the evil one." The Lord doesn't deliver all from the temptation to hurry through the examination; if he were to, he would have to put on the forceps to deliver some with whom I am acquainted. An agent told me the other day that he had one doctor who never made a urinalysis, just held the urine up between himself and the light, and smelled of it. Axis traction forceps wouldn't get a doctor like that away from the devil. The temptation is to half do our work, because there is no one who sees us, or who can tell on us. "How much do you weigh?" "168 pounds, that is, I weighed it last year." "What is your height?" "5 feet, 8 inches." I have had applicants to miss their weight thirty pounds, others their length six inches. The physical examination is where we should do our best work. We should look the applicant over in a business way, as we are agents for the company, note his countenance, his color, physical and general makeup, club fingers, protruding teeth, sunken breast, saddle nose, and many things that the blank does not ask about, yet we are disposed to say nothing of these things, for the temptation is to fall in line with the applicant and the agent, and help get the policy. I read of one man who was told by a throat specialist that he had a beginning cancer in his throat. He secured \$200,000 in various life insurance companies before any local medical examiner ever asked to look in his throat.

Overestimating the Risk.

I believe every one will agree with me, when I say that the local medical examiner almost invariably overestimates an applicant. We are afraid that if we do not write "first-class," the company will reject him altogether. Take a man in the community who is a boozier from Cork, and we know it; he is prosperous in a way, he is liberal, and his influence and practice is worth money to the doctor. The agent writes him, and brings him in, and there you are. This applicant does not intend to tell it straight; he wouldn't say it out loud to himself, much less before anyone else. "Do you drink whisky?" "Oh, a little, Doc; some days two or three drams, some days none." Now, that is a lie and we know it. Still, we haven't got the nerve to write one quart a day, for that much would kill the devil, and we know the company would reject the application. We are tempted to withhold things we know in regard to a man's personal character, that would influence a risk. A good risk may be a bad one if the applicant is a fighter; he may have seven deadly enemies.

Some doctors honestly believe that life insurance companies are not looking for honest local medical examiners. They have gotten the idea that the companies want business, and that if an applicant has a prospect of living five or six years they want him anyway. They act on the belief that

seventy-five per cent lapse anyhow, and should he die, the policy paid only creates five times more business for the company. My excuse for mentioning this is that quite a number of doctors believe it.

One of our Texas medical directors said not long since, before the Medical Directors Association, that the life insurance companies up North said that the death rate in Texas was very high, that the death claims were not of proportion to States up North, and that it was considered by them as a reflection upon the local medical examiners of Texas. Now, I believe that the death rate is high, and I am in a position to say that the death claims are very heavy, for I have seen the policy-holders die and their people get the money. When I see one after another go off somewhere and get fancy policies, ranging from five to sixty thousand dollars, men who have incurable diseases, and everybody knows it, such as diabetes, Bright's disease, consumption, valvular diseases of the heart, some whose very weight runs forty pounds low, others 100 pounds too heavy, boozers, gormandizers, coming back home to die, and they do die, and then here comes the State agent, or district manager, to settle the claim with from one to three premiums paid. The local paper writes it up, the fool people fall over one another to get a policy in the big, big company, that can pay such a fancy policy so promptly.

Now, I think that when the medical directors up North let such things pass, and make an advertisement out of it by paying the claims promptly, there is room for us to do some reflecting too.

Life insurance is a business based on desirable risk, and is not an asylum for physical, mental or moral unfortunates; neither is it pension headquarters, and should not be regarded by the public, much less their local medical examiner, as legitimate prey for graft in the name of pity or sentiment.

Washington said: "Few men can resist the highest bidder." One man offered me half his policy to get it for him. I might have been tempted, but I would have been afraid to sue the widow. An agent said to me one day: "I am going to write to old man Smith. I want you to forget what his brother died with, cut his belt measure down about four inches, make him two years younger and one inch longer, and I think I can put him through." He didn't offer me one cent to do this, either; about the only remuneration I would expect would be to smell brimstone for about a thousand years.

Helping the Agent Get New Business.

That is only a sly bribe. I believe that when a local medical examiner helps to persuade an applicant, he is then disqualified for making the examination, whether the agent whacks up or not! We are tempted to help the agent for the benefit of the examination fee, if for nothing more. A man told me once that if I didn't get him his policy he would change doctors, and not have me in his family any more. I told him that I had done no dishonorable act to secure his patronage, and I was sure that I had rather lose it, influence, friendship, and all, than to do one dishonest thing to retain it.

The Temptation to Hurry.

Were you ever a general practitioner? If so, you know how it is for an

epidemic to be in your neighborhood, or an obstetrical stampede on. That is when all the accidents happen, too. You have spurred yourself until you won't even flinch, and then your smiling, affable agent puts in his appearance. He begins to bring in his applicants. I'd wirted down that his granddaddy died with post partum hemorrhage, aged 12 years, sick six months, before I would let Dr. Johnny-on-the-Spot get that threatening obstetrical call! Hurry, hurry, hurry! We have to hurry, or we can't do everybody's practice, catch all the babies, and do the life insurance examinations, too. But experience has taught me that I had just as well do it right, for the medical director immediately fires them back if they are not properly done.

Doctors get jealous sometimes, and I have known great injustices being done for no other reason than to even up old scores.

Sometimes some of us are tempted to get too smart. The idea is, to impress the medical director in the home office that way out here in this county seat town there is an embryotic DeCosta, only waiting opportunity's stork to shoot athwart the intellectual horizon and make Halley's comet look like a lightning bug. We look wise and write the pulse 100 when a man has run up the steps with a full stomach. We strip all clothing off and make a very searching examination, with the idea that there is not a sound applicant, no not one! We pride ourselves on being able to diagnose diseases in their incipency. Such a doctor has a fly in his stethoscope.

Now, gentlemen, there are other temptations, but these will suffice. Please do not consider that I am guilty of all the tricks mentioned, neither would I ask you to believe that I have not yielded to some of the temptations offered. I'll ask you also not to think that the tricks mentioned in this paper is local history in Lampasas, for my competitors are gentlemen in every sense of the word.

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Next meeting, Ione Hotel, Guthrie, Okla., beginning July 11th. Address all communications to the Secretary.

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THE CAUSE AND PREVENTION OF CANCER.

LEIGH F. WATSON, M. D., OKLAHOMA CITY, OKLA.

Member of the Alumni Society of the New York Polyclinic Hospital and Society of the Lying-In Hospital of the City of New York.

A review of the literature of the past year will convince the most skeptical that a definite and substantial gain has been made in our knowledge of cancer. Stimulated by the excellent results that followed a scientific study of the prevention and treatment of tuberculosis, the cancer problem has become a subject of popular interest and is receiving more attention than ever before. The work of scientists and investigators is being carefully followed by an anxious public, who at last realize the importance and necessity of solving the cause, and means of eradicating a plague that claims more victims than any other disease.

Ewing in a recent article in Collier's, says: "In cancer research, ten years of the experimental study of the transplantable cancers of mice, rats and dogs have brought more progress toward a rational cure of the disease than the thousand years immediately preceding. Dogs have already been cured of cancer without the knife, but man must wait his turn."

Bashford writes: "Experimental investigation is rapidly advancing toward a stage at which the nature of cancer will be made clear, the influence of heredity and chronic irritants defined; but a cure is not yet in

sight. The only hope of the cancer patient still lies at present in the general practitioner being so suspicious of all lumps that cannot be explained, that he will urge their removal as early as possible, and have them examined by skilled microscopists. Here I would enter a protest against the snipping out of a little piece for diagnostic purposes, for experiment has shown how great is the danger of dissemination of cancer cells in the individual where they are 'at home;' however difficult it may be to effect the transference of a cancer from one mouse, rat, rabbit or dog to another, the attempt always succeeds if the same individual be inoculated with his own tumor."

Bertillon, of Paris, states that cancer is more frequent in the northern countries of Europe (England, Norway and Netherlands) than in the center of Europe, (Prussia, Austria and France) and much more rare in the countries bordering on the Mediterranean. (Spain, Italy and Algeria). It is increasing in all countries without exception, while in England it has almost trebled in fifty years and causes almost as many deaths as tuberculosis.

Private philanthropy has always been slow to contribute to cancer study because of the apparent hopelessness of the disease, with the result that research workers have been seriously handicapped for lack of funds.

The ancient belief that cancer was absolutely incurable extends back to Hippocrates, 400 B. C., who wrote, "It is better not to apply any treatment to deep-seated cancer, for, if treated, the patient dies quickly, but if not treated they hold out for a long time."

New research laboratories are being constantly established by public-spirited citizens, cities and states throughout the civilized world. The work of Crile of Cleveland, Bloodgood and Cullen of Baltimore, Bainbridge of New York, Gaylord and Cowles at the New York State Cancer Laboratory, Buffalo, and Bashford, director of the Imperial Cancer Research Fund of England, deserve special mention.

Cancer is found in all vertebrates and all races of mankind. It is probably more prevalent among domesticated than wild animals, and is undoubtedly on the increase both in man and vertebrates.

Bashford states it is as frequent in India as in England, irrespective of the vegetarian diet of the Hindoo.

The United States census shows that one woman out of every eight, and one man in every eleven who reach the thirty-fifth year, die of cancer. It is estimated that there are eighty thousand cases of cancer in the United States at present and forty thousand deaths annually.

The death rate is higher in country districts and small towns than in cities. The mortality is also greater in those who work outdoors than in the sedentary classes.

Two fifths of the fatal cases in women involve the breast and uterus, and another two-fifths the stomach, liver and intestines. In men it is more frequent in the mouth, throat, stomach and intestines. This may be due to chronic irritation of these sites from differences in habits.

Bashford says that the sites of predilection show the existence of en

dogenous factors aside from irritation, that is, innate peculiarities of the organs involved.

Any part of the normal body may acquire cancerous properties. Cancer is not transmitted by heredity, but there is the possibility of the transmission of a predisposition. Most authorities believe cancer is infectious; thus it is known to be more prevalent in certain localities and houses. Cancer is no longer believed to be due to a parasite. Park believes that cancer is a specific disease, intensely infectious and transmissible, being caused by an extrinsic agent.

Bashford, Gaylord and other workers have grown thousands of cancers in mice by placing healthy animals in a cage with one suffering with the disease. Bashford states that infection plays no part in the experimental transference of cancer; it is a true transplantation of living cells.

Cancer occurs in epidemics among fish as well as mice and rats. In fish the infectious agent is supposed to be in the water, as healthy fish introduced into an infected hatchery contract the disease.

Bashford and Murray found that a few drops of blood from a normal mouse injected into the circulation of a mouse to be subjected to cancer grafting, prevents the graft from being successful.

Ehrlich and Clowes have independently demonstrated the difficulty of double inoculations. Mice were inoculated at the head with a very virulent tumor; after the tumor began to grow the mice were inoculated at the tail with the same or a more virulent tumor strain which took in only five per cent. of the cases, whereas the controls showed over ninety-five per cent of tail tumors. This phenomenon suggests to them the probability of the existence of powerful immune bodies in the serum.

When a mouse tumor reaches a certain size it is absolutely impossible to inoculate at a second point. Mice which have spontaneously recovered from a tumor are not reinoculable with the same strain. The larger the tumor from which the mouse recovered spontaneously the greater the difficulty of reinoculation. A natural immunity to cancer is found in some animals. Blood from immune dogs has been transferred for the cure of dogs with sarcoma. No cancer has yet been transplanted from one species to an individual of another species.

The extension of cancer may take place by direct infection of the surrounding tissues, but it is usually through the lymphatics or blood vessels.

Bland-Sutton states: "The more carefully tumors are investigated, the more obvious does it become that the borderland between the malignant and innocent species becomes less easily definable."

The precancerous stage is usually manifested by an ulcer which heals, leaving a scar with thickening and slight redness. While the treatment of precancerous states and innocent tumors is easy, safe and effective; the treatment of developed cancer is today the most difficult problem of surgery.

Ewing says the only hope for the cancer patient is an earlier resort to the operating surgeon and more frequent submission to the knife; it is

doubtful if this prospect has been any more abhorrent to the patient than to the surgeon.

Paget and Billroth claim that one-fifth of all cancer can be traced to an injury of some kind. The chief reason for the development of cancer in the later years of life is the lack of resistance consequent upon the physiological changes in the body tissues. Young people are less liable because their body cells are vigorous, resistant and growing rapidly. However, when cancer once gains a foothold in youth it grows faster and is more fatal than in middle or advanced life.

In animals, as in man, cancer is associated with certain periods of life, being more frequent as age advances.

Cancer occurs in every race, and its greater frequency in certain countries is more from irritating influences than any peculiarities of climate, soil or diet. The occurrence of cancer at certain sites in different races is due to habit and is determined by external irritation.

Cancer of the mouth, "tobacco cancer," is rare among American and European women, but is common to men. In India and Ceylon, where the women chew betel nuts, cancer of the mouth is very frequently seen, beginning on the cheek opposite the teeth of the lower jaw. Lip or pipe cancer is usually found in men and is due to the heat and irritation of the pipe. In Turkey, Palestine, Algeri and Morocco where cigarettes are smoked excessively, cancer of the mouth is said to be rare.

Cancer of the skin of the abdomen, a rare condition, is common in natives of Kasmir, who wear abdominal charcoal heaters next to the skin.

Visible cancer is frequently preceded by chronic irritations; smoker's cancer of the lip, mouth and tongue. As friction of clothing or implements required in certain occupations. From picking warts and moles. Irritation of nails in the mouths of lathers. Irritation of broken teeth or tooth plates. Irritation of soot in chimney sweeps. Irritation of cuts and fissures of the lips. Old warts and scales on the face. Burns from the x-ray may be followed by cancer. Gallstones are usually found with cancer of the gall-bladder. Cancer of the stomach is usually the result of an old ulcer that has existed for months or years. Calculi are often found with cancer of the kidney and bladder.

A soft cancer is more toxic and grows faster than a hard one. There is a varying degree of malignancy, some growths tending to occur and return after removal more readily than others. A single injury is more liable to cause sarcoma than carcinoma; carcinoma is more likely to follow prolonged irritation. An injury may call the patient's attention to a pre-existing cancer.

McGraw says: "Surface cancers are largely due to injuries, chronic irritations, inflammations and ulcers which destroy the resisting powers of the tissues and stimulate the development of cancer germs. The neglect of such troubles, therefore, especially in persons of middle or old age, may result in disaster. We should, therefore, see to it that men and women approaching

middle life are cured of such troubles. Uterine lacerations should be repaired, gallstones removed, gastric ulcers operated upon, chaps, indurations and ulcers of the mouth excised, thereby preventing cancer development in such localities. Because of their liability to develop into cancer, tumors of all kinds should be excised."

A tumor that is increasing in size or returns after removal should be looked upon as probably cancer, no time should be lost in thoroughly excising all of the suspicious mass and submitting it to a skilled microscopist for a positive diagnosis.

The earliest symptoms of cancer of the uterus usually appear near the menopause and the increased watery discharge and occasional presence of blood are considered part of the "change of life" by most women and as a consequence, disregarded. It is a common belief that all sorts of irregularities are to be expected at this period and often valuable time is lost in diagnosing and treating the cancer while it is curable.

Because of the extreme liability of women to this form of cancer, the symptoms of the preeancerous or first stage of uterine cancer should be known to every woman.

1. Leucorrhea, if not previously present, or if existing, becomes more profuse, watery and irritating.
2. Loss of weight, if no other cause is apparent.
3. Pain in the back or side.

Cancer is a local disease at first, and if promptly treated can usually be cured. The only hope for a cure is to secure early and complete removal. Medical treatment at the best only gives temporary relief and is always dangerous because of the valuable time lost. Bainbridge demonstrated that the enzyme treatment for cancer proposed by Beard, of Edinburgh, does not inhibit the growth, prevent metastases nor cure cancer.

The cases of cancer treated by Hodenphyl with the serum from patients who had spontaneously recovered from cancer, have all died.

Gaylord says: "That the x-ray, either directly or, as would appear, indirectly robs the epithelial cell of the factor which causes its unlimited proliferation, and leaves the normal epithelial cells unaffected, is shown by the interesting experiments on warts by Perthes.

Perthes has clearly demonstrated that the dose of x-ray required in the treatment of cancer, or for the removal of warts, does not injure directly the normal epithelium or the epithelial cells of the tumor. If the tissues surrounding the tumor are overdosed a so-called x-ray burn may be induced, but this is an injury entirely independent of the ideal therapeutic activity of the agent. Perthes has shown by sections of a wart that has been properly dosed, frequently with one treatment, will thereupon undergo a process of retrogression, in which all of the cells forming the wart become hornified, with the exception of those of the deeper or germinal layer; and these promptly proliferate and produce, not a new wart as before, but normal new skin to repair the defect. If the dose is not sufficient the super-

facial cells will undergo hornification, the wart will reduce in size, but the cells of the deeper layer will again proliferate and produce a new wart. This proves conclusively that the x-ray does not act through any form of injury to the cells themselves. It removes from them the tendency to proliferation which produces the wart, and leaves behind, in the necessary cells of the germinal layer, normal uninjured cells which are capable of producing new and normal skin."

Chas. Ryall, of the London Cancer Hospital, (quoted by Bainbridge), says, cancer cells may escape during operation as the result of incising or lacerating the primary growth, cutting across or tearing an infected lymph vessel, or even from rupture of a cancerous gland, and such cells getting into the wound are quite capable of causing and do frequently cause, cancer recurrence. In the parent growth, the cells are more or less encapsulated in fibrous tissue, but some cells escape during operation and find a resting place in the wound which is comparatively unprepared to meet and resist the invasion.

Bainbridge states if nature's barriers have already been broken down by ulceration a section in some cases may be removed from the surface without doing harm; but in cases of doubtful malignancy, where nature's barriers are intact, do not incise the tumor for the purpose of removing a section for microscopic examination—remove the tumor and make the microscopic examination afterward. If two mice, each with a mouse tumor, are placed under as nearly uniform conditions as possible, if one is incised and the other not, and at the expiration of twenty-four hours each tumor is removed, the mouse in which the tumor is incised in a high percentage of the cases dies from metastatic involvement, whereas the mouse that was left alone usually recovers and is free from metastases.

As a rule, a cancer of the uterus that can be diagnosed by the history of a profuse or bloody flow for several weeks, or if a tumor can be felt, has progressed beyond the border line between possibility and impossibility of cure. General malnutrition as well as diminished vitality of the non-cancerous tissue in the neighborhood of malignant disease, as a rule, tends to increase the rapidity of the local extension and render more liable the development of metastases.

Upon the appearance of any of the previously mentioned symptoms of cancer, a woman should immediately seek her physician and insist on a thorough examination.

Cullen asserts that any bloody or watery discharge that cannot be definitely accounted for, demands an immediate and careful local examination.

If there is the slightest possibility of cancer existing she must lose no time in consulting a surgeon. Even in the earliest stage the only chance for a cure is an operation while it is still possible to remove all of the cancerous tissue. While still local it causes little discomfort and no loss of weight. Horsley of Richmond, states that cancer of the breast never causes pain in the early stage of its growth,

Serious symptoms of uterine cancer rarely appear before it has become inoperable. The cachexia appears late and is due to the poisoning of the system by the cancer toxins and at this period the cancer is practically always incurable. In fifty per cent. of the cases where the operation is done four weeks after the appearance of symptoms the cancer has spread beyond the uterus. A very small per cent. are cured after four months' bleeding.

At the John Hopkins Hospital there were only forty-three per cent. of recoveries following the most thorough operation where there was no auxiliary involvement; of the cases with auxiliary involvement only twenty-five per cent. survived the three year limit; while those with cervical involvement only seven per cent. lived over three years.

Handley, of Middlesex Hospital, London, was one of the first to emphasize the importance of removing the deep fascia of the breast to prevent cancer return. Butlin, of London, reports only twenty-one per cent. of the operations for cancer of the tongue are successful. Forty per cent. of the cancers removed from the face and skin by operation are followed by recurrence of the growth.

Handley propounds the following law of cancerous growth: "Every aggregation of carcinoma cells has a definite life cycle, and, after, increasing in size for a varying period at a varying rate, tends spontaneously to undergo fibrotic and degenerate changes. These changes extend from the center of the mass centrifugally to its periphery, lead to its shrinkage, and terminate in the replacement of the aggregation of cancer cells by a fibrous scar.

We do not cure cancer, we remove it; and, as a rule, when every cancer cell cannot be removed it is not curable.

Andrews says the risk of recurrence in malignant growth increases as the time of the square of the growth. This is the accepted rule of cancer growth and forcibly illustrates the extreme importance of an early and complete operation if the patient's life is to be saved.

The cancer mass should be kept clean by frequent dressings with antiseptics, either lotions or powders. The fetor is usually due to an infection with pyogenic micro-organisms and not to the cancer per se.

Bainbridge says the *lctio pancreatitis* applied locally clears the ulcerating surface by removing organisms, thus aiding in diminishing an absorption of their products. The *injectio trypsinii* in some cases, causes a rapid disintegration of cancerous tissue in the center of the tumor while periphery continues to grow.

All dressings used on cancer wounds should be burned and the most scrupulous cleanliness observed by those who are brought in contact with cancer patients who require frequent dressing of foul, fetid or sloughing tumors.

DISCUSSION.

Dr. Lain, (Oklahoma City.)—This paper is of too much importance to my mind, to be passed unnoticed. The doctor's paper is a most excellent

paper to my mind. It shows a great deal of study and collection of statistics and investigation. It seems a little strange to some of us who have made some special study along this line why the general practitioner does not give more attention to the subject concerned. This disease is the cause of the death of from nine to twelve per cent. of the deaths occurring after thirty-five years of age. No other disease, I believe, in which the death rate is so great as this excepting one and that is tuberculosis.

Perhaps many of you who have been practicing in Indian Territory or Oklahoma have not had your attention called to the fact if it is true, as asserted by a man engaged with the government medical service last year, that out of a collection of thirty-odd cases as reported by the agents, only twenty-four cases of cancer were reported. Out of this number some twenty were questionable. Possibly ten per cent. or fifteen per cent. of this number might be syphilis or tuberculosis. Then I say the American Indian seems to be almost immune to cancer. What does this mean to us? It may mean a great deal. Why is it true? If we study his habits, the character of his skin, we may discover something of value to us in this line. I am now endeavoring to collect statistics on this line and within another twelve months I am going to have some statistics on it. I am visiting the Indian schools and making personal inspection of every so-called cancer among the Indians, and in no case so far have I made a diagnosis of cancer in an Oklahoma Indian. Can you find such a record among our race? We cannot. Then I say, gentlemen, study the Indian. It may be that the outdoor life of the Indian, not only the sunlight, but his fresh air may have something to do with it. It may be because of his skin being of such thickness that it is not susceptible to this disease, whereas he is very susceptible to other diseases. If any of you have any statistics along this line, I will certainly appreciate it, and I will make a special trip to see your Indian.

Dr. Watson—I hope that Dr. Lain's investigations will clear up the question of the absence of cancer among Indians.

JOINT MANIFESTATIONS OF HEMOPHILIA.

DR. C. S. NEER, VINITA, OKLA.

The frequency of joint lesions in hemophilia has been recognized for many years. The early writers regarded them as manifestations of gout or rheumatism. Volkman, in 1868, showed that hemorrhage into joints in hemophiliacs frequently results from a slight trauma and since that time the hemorrhagic nature of these joint swellings has slowly come to be well recognized. Koenig's able paper published in 1892 was an important factor in securing a general recognition of the true pathology of this condition, and in emphasizing its importance.

Koenig divided the symptoms of these cases into three stages: (1) The stage of hemarthrosis, in which there is simply free blood in the joint; (2) the inflammatory stage, in which occur thickening of the capsule, deposi-

tion of fibrin and beginning degeneration of the articular cartilage; (3) the stage of contraction and ankylosis.

Large or small joints may be affected but the large joints, especially the knee, are most frequently involved. Among thirty-two cases collected by Piolet, the elbow was involved six times, the ankle twelve times, and the knee in every instance. In many of the reported cases, the first attacks have occurred in childhood. As a rule the condition does not occur in females, but a few exceptions to this have been reported lately.

A slight trauma is the common exciting cause of the hemorrhage. Considerable swelling may occur within a few minutes. There is only a moderate amount of pain and very little tenderness. There is often a slight rise of temperature. Sometimes the trouble does not progress beyond the first stage, the blood being absorbed and the function of the joint being restored. Repetitions of the attacks are likely to result in permanent changes in the joint, although Goelet has reported a case in which the patient had more than forty-five severe hemorrhages in the right knee. The blood in each instance had been quickly absorbed and but slight impairment of function had occurred. The left knee was contracted after having been the site of forty hemorrhages, all but the last one having been well borne.

If the blood is not absorbed the joint enters upon the second stage and presents a condition resembling tubercular arthritis. This terminates in the third stage in which the joint cartilage becomes eroded and the joint cavity may be entirely obliterated.

In the diagnosis of this condition the history of the patient is of the utmost importance. Any joint affection in a patient with a history suggestive of hemophilia should be looked upon with suspicion.

The first stage has been mistaken for rheumatism and for tubercular hydrops, but it is more apt to be confused with acute synovitis, for the joint effusion often follows a trauma. Gonococcal arthritis and intermittent hydrops must also be excluded. The second stage almost perfectly resembles tubercular disease of the joint. Hemophilic joints have several times been operated upon as tuberculosis, with a fatal result in every case. It is of interest to know that Koenig himself twice made this serious mistake.

In the third stage, the ankylosis, flexion and atrophy may present an appearance indistinguishable from that of tuberculosis.

The treatment in the first stage should be directed to the absorption of the effused blood. A snug bandage over elastic cotton should be applied to the joint. Some movement should be allowed as this hastens absorption. Ryerson recommends aspiration of the joint with a fine needle, and the injection of a few cubic centimeters of adrenalin solution. Constitutional treatment by drugs such as gelatin, adrenalin and calcium chloride should be tried, but the result of such treatment is uncertain. In the latter stages it may be possible to straighten the joint by traction, after which a splint or cast should be applied for a time. Any cutting operation should be absolutely avoided.

Following is the report of a case which occurred in my service in the St. Louis City Hospital. A report of it appeared in the Journal of the American Medical Association in June, 1907.

PATIENT—H. C., male, age 28, entered hospital October 22, 1906, on account of a swelling of the right knee. At the time of his entrance his temperature was normal and he could walk with little inconvenience.

HISTORY—The father of the patient was living and healthy. The mother died of some lung affection. Three brothers and three sisters were living. All of these were said to be healthy with exception of one brother, who, it was learned, beyond a doubt, was a bleeder. One paternal uncle died of some obscure abdominal trouble. No history of hemophilia in the grand parents could be obtained.

Patient used alcohol somewhat excessively, and had been a bartender in a saloon for a year and a half. When a boy he was subject to attacks of "rheumatism," sometimes articular, sometimes muscular. He had the usual diseases of childhood, and had malaria several times. He denied syphilis, but admitted having had gonorrhea several times. In 1899 he had what he called a dysentery. He passed blood from the rectum, but the passages did not cause pain. He was in a hospital in Dakota two months at this time, bleeding at intervals. When twelve years old he received a small cut over the right eye which bled more or less for two weeks in spite of all efforts to stop it. Ever since he had noticed that a small cut bleeds persistently. In 1904 he was in a hospital with a scalp wound and the bleeding was stopped with difficulty. A little later he cut his finger and thumb with a pane of glass and was obliged to enter a hospital, where the bleeding continued several days before it could be stopped. In July, 1906, he fell and bruised his right knee. It soon became swollen and somewhat painful, but he did not go to bed on account of it, and in two weeks the swelling had largely disappeared. There was no history of hemoptysis or of hematemesis, but he had had persistent nose-bleed several times, which on one occasion, necessitated a plugging of the nostril for its control.

PRESENT TROUBLE—On the evening of October 13, 1906, patient accidentally struck his right knee against a box. There was but little pain at the time and he slept well that night. The next morning he noticed a sense of stiffness in the knee and after walking on it for a short time discovered that it was swollen. The swelling was still present on his admission to the hospital two weeks later.

PHYSICAL EXAMINATION—The thoracic and abdominal organs showed nothing abnormal. The reflexes were normal. The urine was clear with a specific gravity of 1028, and contained no albumin, sugar or casts. The right knee joint was enlarged and evidently full of fluid, the swelling being fluctuant and corresponding to the extent of the synovial membrane. On the right side of the external condyle of the femur was a small ecchymosis, marking the point of injury. The knee was very slightly tender to pressure and was somewhat warmer than the left one. The patient's tem-

perature at no time went above 101, and was usually below 99. There was little complaint of pain and the functional disturbance of the joint was slight.

The diagnosis of hemarthrosis was made, based upon: (1) A clear and well substantiated history of hemophilia, one brother also being a bleeder; (2) the occurrence of a well-marked swelling of the knee joint, following a slight trauma, with scarcely any tenderness, and but little pain, fever and functional disability. The treatment consisted in bandaging the swollen joint snugly with elastic cotton, and the administration of small doses of potassium iodide and an occasional purge. The man made a good recovery, the swelling disappeared completely and he left the hospital in less than a month with the knee practically well.

The subsequent history of this patient is of some interest. Two months after leaving the hospital he returned with symptoms which were at first attributed to gastritis. He vomited considerably, was constipated and intestinal obstruction was suspected. Three days after admission his pulse became extremely weak and frequent and the vomitus had a fecal odor. There was no pain and no distention of the abdomen. The patient was evidently in a dying condition and an operation was advised as offering the only chance. His relatives, who knew very well his tendency to bleed, finally consented. Upon opening the abdomen the peritoneal cavity was found to be filled with bloody fluid. Almost the entire intestine was of a dark red color like that of beginning gangrene. The mesenteric vessels were engorged. No explanation of the cause of the condition was found in the belly. The man died within three hours after the operation. A post mortem was not obtained, and in its absence we did not feel quite sure of what the condition was which caused his death. The appearance of the bowels and mesentery at the operation suggested the possibility of a sudden portal obstruction. However, in view of the man's previous history, the presence of blood in the abdominal cavity, as well as some of the symptoms he presented during the last day or two of his life, it seems very probable that hemorrhage was an important factor in producing his death.

DISCUSSION.

Dr. LeRoy Long, McAlester—I wish to ask the essayist what he knows about blood serum. Dr. ———, of Chicago, advises blood serum. I was in his clinic one day and he demonstrated its use. He obtained it from the aorta of a rabbit, and gave it to a patient. He stated that where blood serum could not be obtained the physician would get good results from ordinary antitoxin—diphtheria antitoxin.

Dr. Neer, closing—Replying to Dr. Long, I have had no experience in the use of blood serum for hemophilia, but know it is now used.

A LOOK AHEAD.

DR. A. K. WEST. OKLAHOMA CITY.

The status of the physician and his profession in the realms of culture is in no sense immutable, but subject to those evolutionary and revolutionary changes showing the effects of any new cause hitherto inactive. While in a general way the present status of medicine, its relationship to society and to the State, has been a slow, gradual development, affected by numerous causes, new discoveries in science, the favorable or unfavorable attitude of the government, in fact, a multitude of causes more or less important—yet there stand out in the history of medicine two epoch-marking periods, namely, the period of Hippocrates, that golden period of Greek history, accentuating as it does the very crest of a wave of culture which has possibly never been surpassed in the history of the human race. It is no doubt an error to attribute or to credit Hippocrates solely with the revolution in medicine with which his name is associated. The assent of this cause, this discovery, usually attributed to the father of medicine, is that disease is not supernatural, is not a visitation of the wrath of the gods, but a natural phenomenon to be studied, prevented, or cured, by the rational use of material agents; that prayers, sacrifices, incantations, dreams, etc., had no place and were of no value in preventing or healing disease. The effect of this new conception let us note for a moment.

From the earliest times—with the very dawn of legend—the healing art in Greece was monopolized by the priests of Esculapius who attended the temples dedicated to the god of healing and officiated as propitiators between the luckless invalid and the wrath of the gods. To be brief, this was the practice of medicine in Greece until the Golden Age. But with the widespread acceptance of the Hippocratic conception of rational medicine, the temples of Esculapius began to fall into decline, the people no longer made pilgrimages to the temples, they no longer depended upon sacrifices and incantations, but under the teaching of Hippocrates and his immediate followers, medicine, from having been a pure superstition, rose to a rational art. The family physician took the place of the priest, and with certain modifications the status created by Hippocrates and his period has continued down to the present moment.

The next great epoch in medicine and one of the two, was a discovery as far-reaching in its significance and destined to alter the status of medicine as a profession almost as profoundly as the teaching of the Greek fathers. No one man can make claim to be the discoverer of the germ theory of disease although credit must be given to Louis Pasteur more than to any other man; however, this is unimportant for the purpose of this paper. No matter to whom the credit is due, it is now a conceded fact that instead of—as was believed by the rational school of medicine and by the most enlightened, until past the middle of the 19th century—disease being due to, and caused by, the influence of climate, of season, of poisonous gases, general telluric and atmos-

pherie conditions of uncertain kind, that at least a great portion of the ailments of humanity, certainly all of the epidemic and contagious diseases; indeed, the major portion of the ills of humanity, are due to parasitic micro-organisms which enter the body, grow and develop at its expense.

To recapitulate in a few words—these are the two great epochs: The discovery by Hippocrates and his age that disease is not supernatural. The second epoch that the natural causes attributed by Hippocrates in the place of the supernatural, are of comparatively little importance, and the growth and multiplication of germs are the cause of most of the phenomenon spoken of as disease.

Well, what effect will this new conception have on the status of medicine? First, it necessitates a change in the usual classification, usual placing of medicine as a department of culture. The old classification that medicine is one of the learned professions, nearly allied to theology, law, philosophy, etc., must give place to the conception of medicine as a department of the science of biology. From the domain of pure reason and deduction, it must be regarded as being experimental and inductive. As a natural result of this new truth, profound modification must occur and is even now beginning to be noticeable in state medicine, in medical education, especially touching sanitary science and materia medica. And I further believe—though evidence of this is not at this time apparent—that the relationship of physician to patient, and especially, our present fee system, must undergo some sort of readjustment.

To take up the first of these modifications—State Medicine. It is apparent even now that the educated public are beginning to awaken to the vast possibilities of applying the new scientific medicine to the prevention of disease. There seems to be little question but that in a few years a national department of public health will be installed. In the platform of both of the dominant parties prior to the last presidential election was a plank endorsing this idea. A bill was early introduced by our own Senator Owen, which failed of passage, and with some slight modifications has been introduced at the special session of Congress, and while it may not pass at the present time the ultimate success of the propaganda can hardly be questioned. This move is also clearly noticeable in practically every state of the Union, being evidenced by the larger powers of health boards, more stringent laws regulating the practice of medicine, more careful attention to water supply and sewage disposal, indeed to all those conditions which are known or believed to play a part in the dissemination of disease throughout the country. Notice that all of this activity looks toward the prevention of disease and has nothing to do with its cure, so that the recognition of the possibilities of preventive medicine is one of the factors which must modify our status in another direction, this will be mentioned later.

Our whole medical educational system will have to be builded almost from the ground up. The whole system of deductive lectures, the handing down from generation to generation, of theories, of hypotheses, no matter

how plausible or how backed up by experience and authority, fails to come up to the standard demanded in the teaching of a pure science. The medical student of today is not expected to familiarize himself with the opinions of others and that only, but he must verify these opinions by actual experiment on his own account. Therefore, the education of the medical student consists very largely in the equipment, the manning, and the scientific use of a specialized biological laboratory. This means immensely increased expense in educating men in the medicine of today. The period of the privately owned medical college, maintained by revenue from tuition only, is rapidly drawing to a close. Likewise the period of the self-made or self-educated physician. The preliminary education required in addition to the amount of work necessary to complete the present medical course, which is indeed far from covering the whole possible field of medical science, makes it practically impossible for a man to earn his living and a diploma in medicine. It would seem, then, that the profession of medicine of the future must be filled by the sons of wealthy or well to do, and the poor boy who has to make his own way must be satisfied with some other field of activity. This indeed would be the result, and will be the result, unless some change occurs by which real talent and power are assisted to entrance in the professional field. This change must and will come. My own experience has led me to believe that the son of the wealthy and doting father, who has all his expenses paid through the preliminary and medical course, in most instances profits nowhere near the amount of his possibilities.

A few weeks ago, in an address by President Vincent of the University of Minnesota, attention was called to the necessity of careful watching and combing, as he expressed it, the preparatory schools of the country, for boys and young men of character and ability, stating that some provision should be made for the systematic hunt of such material and a system of scholarships arranged by which these youths should be educated at the public expense.

This is only one suggestion, and I have no time at present to outline any system in detail, only to call your attention to the fact that some change is necessary and will come about. There will be a time and that at no distant date, when brains and ability will be assisted, and when mediocrity and worthlessness will be barred from the profession, no matter how much money is behind the effort to back it.

We have something like this in our method of selection of men for the army and navy, and in my opinion a system of medical schools, owned either by the state or federal government, to which admission is gained by competitive examination only, and men allowed to continue only upon condition that their lives and character of their work justifies the state's expense in their behalf.

In connection with the future institution of medical education there will be not only the hospital for the study of the treatment of disease, but there will be the research station in which the etiology, pathology and dissemination of disease will be studied in the same manner.

In the medical school of the future there will be a profound change in the teaching of materia medica. Physiological and pharmaco-dynamics will play an equal part with therapeutics. Experimental therapeutics may not sound well, but if we would really know the power of agents in healing disease—the real part they play—there is only one way to know with certainty, that is, by actual error-eradicating experiment. It is a significant fact that the present council of pharmacy and chemistry of the American Medical Association have suggested the trimming down of the list of names in the materia medica, which may be properly used in examining before state boards from about fifteen hundred to one hundred and fifteen. While talking recently with a member of the council, he assured me that in his opinion the list was even then entirely too large. I may be regarded by some of my fellow practitioners as a therapeutic nihilist, but I am fully convinced that the physician armed with complete knowledge of the dynamic possibilities of a score, or less, of medicaments, will be a far more efficient therapist than the average of us who are practising medicine under the old regime and the old methods of education.

Now, as touching our relationship to our patients and our fee system, it is quite possible that right here a controversy may be started. However, be careful to defer judgment until you have looked at several sides of the question. If preventive medicine is to constitute an important work of our profession in the future, and we must allow that some of the most brilliant and valuable discoveries of the past few years have been in this field, and we must also allow that it is better to prevent disease than to cure it; if we can prevent smallpox and yellow fever and malarial fever and diphtheria, is there any reason why, in the course of time, we will not master all of the infectious diseases after the same manner? What, indeed would be the status of the physician in a community where there were no epidemics and no infections? Notice, our whole fee system is based on **curing** disease; we are not paid for preventing it. If you treat a family of a half dozen through an attack of smallpox a usual and ordinary fee under our present system would be, at least, several scores of dollars. If you prevent the family next door from having smallpox, by vaccination, they feel that five dollars is a large charge for the service.

With the advance of medical science, as noted above, the possible advance, when most of our diseases are under control and preventive medicine constitutes a large part of our work, does it not appeal to you that it would be wiser that a fee system putting a premium on keeping people well, would stimulate the medical profession and would be better for the people, would be more desirable than our present system, which really puts a premium on keeping people in ignorance and keeping them sick as long as they are able to pay. It has frequently occurred to me that the medical profession as a whole display a great nobility of character and a high order of integrity that so few of them are prostituted by the present fee system. Very recently several men of national, and one at least of international, reputation as writ-

ers and thinkers have called attention to this very point. In one of Bernard Shaw's late publications he says it were as wise to have a judge who is financially interested in the outcome of litigation, and expect justice, as to expect the best results from a surgeon who is paid a large fee if he operates and nothing if he saves the patient an operation. Samuel Hopkins Adams, one of our American magazine writers, has recently touched upon the same subject. Woods Hutchinson, with whom I am acquainted and for whom I have the greatest respect, has also recently declared that the time would come when our fee system would be more nearly like that of the Chinese than the one now in vogue.

The object of this paper has not been to institute any innovations, but merely to outline possible and probable changes for the better which may be expected in the near future as a result of the last epoch-marking period in medicine—that of the germ theory of etiology.

DISCUSSION

Dr. Hatcher: I wish to say that his paper is very beneficial. I think the older we get and the more scientific we get the more interested do we become in these evolutionary problems. To my mind the question of evolution is a most enticing question. Evolution along all lines. I have in the last year read very carefully Hegels Evolution of Man. In my early training I didn't get a chance to study biology and I have waded through two volumes of Hegels Evolution of Man. I find that very interesting. I have also studied very carefully his ?? Universe. A man that is thorough in biology is generally a very proficient man. I appreciate Dr. West's remarks. I think a young physician should study along solid lines. Along lines of life that will be beneficial to him when he gets old.

Dr. Williams: I have not had the privilege for the past ten years to be in a medical college but I remember when I took my course in medicine the history of medicine was left a blank to us as students. In his paper the doctor brought out a point that seems to me as physicians we are going to consider. When we are doing as much as we are if the time ever comes that we are able to accomplish what we ought to, the matter of fees will have to be provided for and we will have to face about and devise some other means to raise them. I am glad to have that subject brought up because I think we will have to consider it in the future.

Dr. Bobo: I enjoyed Dr. West's paper very much. I know just how he feels along that line. He is taking an advanced step. I will not take up and discuss his paper as a whole but just refer to one point in his paper, and that is in regard to the point that Dr. Williams has just spoken of. The question of remuneration for services rendered by the physician for the benefit of the public good, the public health. In the past few years various organizations throughout the country have drawn upon the medical profession for certain advice in regard to public health and have made appointments and engaged the services of men who

are competent in that line to give advice to a community. And physicians have put themselves to considerable expense and trouble in filling those engagements and appointments without any remuneration whatever. I think the history of medicine has been one that has been more closely connected with true charity than any profession that the world ever knew. I dare say there is not a doctor in the State of Oklahoma that ever had to be asked to contribute his services to that of charity or for the betterment of the health of his community. He will do all the charity work and do it cheerfully and freely and as efficiently as he can without the asking; without any expectation of remuneration whatever. It is a pleasure to the true physician to help a fellow man whether he gets anything for it or not. But the trend, as the doctor says, is going where the physician's services are demanded and asked for without any consideration or remuneration whatever to deliver addresses to communities; to sometimes go before this society or that society and hold magic lantern shows and moving picture exhibitions and telling the people how they may get rid of those conditions and avoid those conditions. And nineteen out of every twenty that attend those lectures say that that doctor is there to boost himself, or wants to get himself before the community; he wants to show that he knows more than some other doctor; he doesn't get anything for it and really it is not worth very much and we won't consider it.

If the doctor is called upon to give advice to the people about how to preserve their health let him look at it from a strictly scientific standpoint and not seek those occasions to show himself and to demonstrate to the people that he has a superior knowledge of that specific subject, but let the people come to him. Sit in your office and in a dignified way and prepare yourself to do good work. Put in your time that you are studying to give to free lectures and prepare yourself to do work that can't be criticised, and when they want you to make a discourse say that an ordinary lecturer gets \$100.00 a night for an audience of four or five hundred when he is instructing them in other matters and that your services ought to be worth as much for something that pertains to their lives and general health.

VARICELLA.

J. F. DUCKWORTH.

Varicella is described in most text-books as an acute, specific, infectious fever, characterized by successive crops of vesicles, distributed over the entire surface of the body, which disappear in from four to ten days by desiccation.

In the past two decades, however, a number of interesting observations have been made which prove that the ordinary conception of varicella is erroneous and that there may be and are, many complications which threaten life, that there are decided variations from the usual clinical picture, and what is of especial importance, it is very often confused with small-pox. These points I care to discuss very briefly. Varicella has usually

been considered a disease of childhood only, and some authors have gone so far as to speak of immunity in adults, and have given that as a point in differential diagnosis from small-pox, but during the past few years, there has been such a large number of cases in adults, in places which have remained free from small-pox, that the question of the occurrence of chicken-pox in later life is regarded as settled.

Here are some of the complications which may and do arise in varicella:

Nephritis is the most important of these. Unger has made the following classification:

1st. Latent nephritis in which there are no symptoms, and albuminuria is only discovered when looked for.

2nd. Light nephritis, in which there is marked albuminuria and some oedema, but no severe symptoms.

3rd. Severe nephritis with fever, marked albuminuria, anuria, cramps, gastro-intestinal disturbances, uraemia, etc.

In some epidemics nephritis is especially frequent, occurring after the vesicles have dried up, and it is important to note that a very severe nephritis may follow a very mild attack of varicella.

Arthritis varicellosa may occur during the eruptive period or later, and usually only one joint is affected.

It is divided into two forms:

1st. A simple serous form.

2nd. Severe suppurative form.

The latter may follow secondary infections by pus-germs and occur through general blood infection.

Complications involving the nervous system may follow varicella, as after the other infectious disease.

W. Gay (1894) noted a case of paraplegia, with loss of power, sensibility and reflexes of legs. Marfan noted a case of monoplegia, which affected the arm and also a case of external ophthalmoplegia of muscular origin.

Chorea, multiple sclerosis and encephalitis have also been observed. Secondary infections with pus-forming bacteria are important. In some cases most of the vesicles may become infected and become pustules. Local inflammations, as phlegmons, boils, abscesses, and erysipelas may occur.

The following have also been reported as complicating varicella:

Osteomyelitis, gangrene of both legs, suppurative Phlebitis, suppurative pericarditis, otitis media, meningitis, brain and lung abscesses, empyema and thyreoiditis.

Gangrene of the skin may be observed in the course of varicelli more frequently than in any of the acute exanthematous diseases. I had the fortune or misfortune, as you may see fit to call it, to attend a case of dermatitis gangrenosa, some six months ago, in a girl sixteen years old.

The condition being sequel to a mild varicella. Result—fatal after five or six days.

Varicella may predispose to tuberculosis in the same way as does measles.

One may have a patient with a latent tuberculosis and see that started into an active process, by a mild attack of varicella.

The appearance of the eruptions of varicella may vary from those resembling small blisters to confluent vesicles resembling small-pox, and we may find the variola-like varicella as well as the varicella-like variola.

These cases are exceedingly hard to differentiate.

Time, as a rule, is about all that will clear up the diagnosis, but in the meantime, the reputation of the physician and the safety of the community may be seriously compromised. The number of vesicles may vary according to Thomas from 10 to 800. The contents of the vesicles are not always clear, throughout the course, but may be either watery, milky, purulent or haemorrhagic, and secondary suppuration of the vesicles may occur and they may or may not be umbilicated. Constitutional disturbances may be absent, slight or very severe. The absence of scarring does not always differentiate varicella from small-pox, as some cases have left as many as 300 scars.

In irregular cases of small-pox the distribution of the eruption may be as general as in varicella, and may appear in crops.

In the last Berlin epidemic a diagnosis of chicken-pox was made, upon the appearance of the eruption in successive crops, but it was small-pox nevertheless, and varicella has been seen, in which, all the eruption appeared at once.

Varicella has usually been considered a harmless disease and little attention paid to it, but the unfavorable cases are of sufficient number to require us to guard against making an unqualifiedly favorable prognosis.

I have made no attempt to take up the history of symptomatology of the disease, or its mode of contagion, (for on this, we all agree, that we know nothing) but have tried to bring to our attention some things, which I think should convince us that varicella, that innocent and harmless disease, can rightfully demand of us, just a little more of our attention and consideration. Our own experience teaches us that the new-born infants and those children suffering from intestinal and lung diseases, and above all, tuberculosis children, may be made very dangerously ill with varicella.

THE EARLY DIAGNOSIS OF TUBERCULOSIS, AND ITS IMPORTANCE.

By P. H. Anderson, M. D., Anadarko, Oklahoma.

When we say that tuberculosis is a curable disease, we mean that those cases coming under observation early and receiving proper treatment are curable.

If, before making a diagnosis of tuberculosis, we wait for the classical

symptoms to develop, we have lost valuable time in the treatment, and will find that the great majority of them are already beyond hope of recovery.

No factor in the treatment of tuberculosis is of more importance than an early diagnosis.

It would seem superfluous to make this statement were it not for the fact that comparatively few patients are placed under proper treatment during the incipient stage.

An analysis of the reports of the leading sanatoria of this country, reveals the fact that instead of a majority of the cases admitted to these institutions being in the incipient stage as is supposed, they are in nearly every instance in the minority.

This extraordinary condition of affairs is probably due principally to the fact that it is only recently that it has been demonstrated that tuberculosis was curable in any stage, while it is now generally understood, by the laity as well as the medical profession, that some cases of tuberculosis are curable, the limitations and conditions of the treatment are not generally understood.

It will then be the aim of this paper to add emphasis to that which is already known of the early signs of tuberculosis, and if possible, aid in bringing this class of cases under appropriate treatment while there is yet a possibility of recovery.

I will not deal with the demonstration of tubercule bacilli in the sputum, for it has been demonstrated time and again that they cannot be so demonstrated until the disease is well advanced in many cases.

He who always waits for the tubercule bacilli to appear in the sputum before making a positive diagnosis, loses the most valuable time for treatment, and is likely to come to the conclusion that but very few cases are curable.

The signs or symptoms of tuberculosis can be grouped into two classes: First, the general, and second, the localizing symptoms.

The general symptoms are usually not sharply defined and may be so slight as to escape even the notice of the patient. These general symptoms, while not so important as regards the location of the tuberculous lesion, are of the utmost importance in determining the presence of the disease.

Of the general symptoms of most importance in making an early diagnosis, I shall speak only of fever, disturbed heart action, loss of weight and cough.

Fever may precede all other symptoms in the beginning, and it is not unusual to find a patient up and about and feeling fairly comfortable whose temperature is 101 to 102 every afternoon, and some patients feel stimulated and more comfortable during their period of daily rise of temperature than at other times.

The fever is characterized by chronicity, most often reaches its highest point sometime in the afternoon, and often following a sub-normal temperature in the forenoon.

There is usually only slight constitutional disturbance from the fever.

The maximum and minimum temperatures, although variable in height and duration, usually occur at the same time each day in any individual patient.

A persistent slight elevation of temperature without apparent cause, is a very suspicious symptom, and should always be carefully investigated.

The temperature of the tuberculosis patient is very unstable and subject to variation from very slight causes; thus, slight mental excitement or physical exertion causes more rapid heart action and a rise of temperature.

Pulse: The frequency and tension of the pulse are early and often permanently changed.

The size of the pulse, its fulness and regularity are usually not much changed until the later stages.

The frequency of the pulse is nearly as important as the temperature, and in many cases far more accurate for prognosis.

Increased frequency is of great value in diagnosis, as it stands most often in direct relation to the activity of the disease and the strength of the patient.

The majority of all patients have at first a slightly increased rate (90-100), even when without fever, and frequently when at rest in bed.

The pulse rate and temperature may be independent, but more often there is a rather close relation between the two, which is often expressed by allowing 10 beats for each degree of fever.

Mental excitement, slight physical exercise, attacks of coughing, and a full meal, have a strong tendency to increase the rate in early as well as in advanced cases.

The tension in many cases is lowered from the very beginning of the disease, and is said by some to be present in those predisposed to the disease.

A much greater variation exists between the blood pressure in an upright and in a reclining position than in health.

Potain believes that this hypotension can be used to differentiate a true chlorosis from the secondary anemia of tuberculosis.

Loss of weight: Wasting has long been recognized as the symptom most characteristic of pulmonary tuberculosis, and for this reason has been popularly termed "consumption" or "phthisis."

It is the result of the disease, and usually stands in direct relation to the stage and chronicity of the disease.

Loss of weight is often the most prominent and occasionally the only symptom which would indicate tuberculosis.

It may occur so gradually as to escape the attention of the patient for some time, or it may be very rapid, even in the early stages.

The scales, with the thermometer, give usually the most reliable information concerning the progress of the patient.

Cough: This is the most frequent early symptom, and nearly always the one which first draws attention to the lungs.

It often has periods of marked remissions in the early stages, and the patient thinks he has repeated attacks of "cold" or "bronchitis," and may give a history of repeated attacks of colds over long periods.

A summer cough is always more suspicious than a winter cough, and it is not uncommon for a patient to have his suspicions first aroused when his cough, contracted during the winter, fails to disappear when the warmer weather sets in.

A cough caused by deep breathing should always be looked upon with suspicion.

Cough, in the majority of cases is at first short, dry, hacking, not hard, and rather frequent, with usually not much expectoration.

As the disease progresses, the cough becomes looser, more frequent, and more productive.

There are many other symptoms that occur early in some cases of tuberculosis, but I consider fever, disturbed heart action, cough and loss of weight, the most important.

And any patient presenting any one or more of these symptoms, which cannot be otherwise accounted for, should be looked upon as tuberculosis, until the contrary is proven.

DISCUSSION.

Chairman Scott: In the discussion of this paper I wish to call your attention to the purpose of the subject. That was the early diagnosis of tuberculosis. We don't have much trouble making a diagnosis. In the discussion that you bring forth I hope you will discuss it freely directing your remarks to the early diagnosis and if you have anything that will help anybody you may express it now.

Dr. West: That paper was strictly to the point and is extremely valuable. There is no question at the present time concerning the curability of tuberculosis before it has advanced beyond a possibility of cure. The early diagnosis is the meat of the whole matter.

INDIGESTION

From a Surgical Point of View.

LEROY LONG, M. D., M'ALESTER, OKLA.

To some of you my remarks in connection with this subject may appear to be of an elementary character. However, on account of the looseness with which we have for so long used the term "indigestion," I have felt that it might not be out of place to call attention to certain symptoms indicative of lesions of a surgical nature, when carefully and properly analyzed; to the frequency with which such symptoms are treated in a medical basis under the term "indigestion" or "dyspepsia," and to point out the necessity of surgical procedure.

The conditions to which I wish to call attention may be divided into

two classes, which I will call direct and reflex. In the former division are two conditions, namely:

1. Gastric ulcer, and,
2. Duodenal ulcer.

In the latter division there are three conditions:

1. Diseases of the gall bladder and bile ducts.
2. Chronic disease of the pancreas.
3. Chronic Appendicitis.

All these five pathological conditions produce symptoms referable to the digestive tract, and interfere with the proper process of digestion and assimilation of food.

1. Gastric Ulcer. I will not take up your time to enumerate all the symptoms. Pain immediately after meals is suspicious—pain of this character that is relieved by the administration of orthoform, or other local anesthetic, a few minutes before eating is very suspicious, as it is not likely that the orthoform would relieve the pain if it were not associated with an abraded or ulcerating surface. Hemorrhage, which we so often wait for in order to clinch the diagnosis, has been recently said, by those who have had large experience, to be the least important of all the real symptoms of ulcer. The gastric contents should be analysed and studied; the condition of the patient as to loss of weight, anemia and other general conditions should be carefully investigated. Every case is not easy, but by painstaking work we may be able to come to a definite conclusion.

What should we advise in a case in which we have made the diagnosis of ulcer of the stomach? I have put it down as a surgical condition, for I believe it safer to proceed upon such a basis in handling these patients. That does not necessarily mean, however, that we should advise immediate operation in every case in which the diagnosis has been made. If there is not progressive loss in weight, if the pain is not so severe as to prevent the taking of sufficient nourishment, if there is not progressive anemia with accompanying general weakness, and if the patient is situated so that he may follow a strict regimen, especially as to diet, for a long time, it may be well to undertake treatment of the case by means other than surgical. We must not forget, however, that it has recently been pointed out by MacCarty and others that 71 per cent. of cancer of the stomach may be demonstrated as having been engrafted upon a pre-existing ulcer of the stomach. With this in mind we should not hesitate too long to give the patient an opportunity to get well through a gastro-enterostomy, which is the proper surgical procedure for the cure of this disease.

2. Another type of so-called indigestion has as its basis ulcer of the duodenum. Symptoms of this condition are usually clearly marked. The patient is often—it may be nearer the truth to say usually—an apparently healthy individual. Usually there is no loss in flesh, there may be but little or no anemia or general weakness. The one characteristic symptom is severe pain coming on some time after eating—usually from one and one-

half to four hours afterwards, and this pain is relieved by taking food. Patients soon find this out, and frequently go to bed at night with some kind of food near them so that when they are awakened by the inevitable pain, they may eat and be relieved.

In ulcer of the duodenum, as in ulcer of the stomach, it has been pointed out by careful observers that hemorrhage is one of the least important of all the real symptoms of the disease. Unlike ulcer of the stomach, however, cancer is rarely engrafted upon it.

The treatment may be summed up in practically the same way as in gastric ulcer, except that surgical procedure does not seem to be so urgent as in the former condition for the reasons that the general health is not so frequently affected in so serious a way, and the danger of malignant change not nearly so great. However, it must not be forgotten that many cases of perforation with subsequent fatal peritonitis are reported, and ulcer of the duodenum should always be considered a surgical disease.

3. Recent investigation has demonstrated that disease of the gall bladder is responsible for many cases of so-called indigestion. The typical gall bladder attack is produced by the presence of stones in the organ. A stone engages in the cystic duct, the organ fills with serous fluid, there is sudden, agonizing pain in the epigastrium, generally radiating to right hypochondrium. The attack may occur in one apparently in good health. As the gall bladder distends, the contour at junction with the cystic duct changes, the stone rolls back into the bladder, the pain ceases as suddenly as it began, and the patient feels well. This is the kind of attack that is so often diagnosed as acute indigestion, or gastralgia. Again, the gall bladder may be infected after typhoid, or some enteric infective process. Inflammatory processes follow. Stones may or may not be a pre-existing condition. If they have pre-existed, it may be that the trauma caused by them makes it easier for the development of the infective process. In either case we now have a blind pouch in which the process proceeds, and in which there is poor drainage, for the gall bladder is unable to expel its own contents. It has but little inherent contractility. If the patient weathers the acute infection, he gets on his feet with adhesions in the bile tract area, he has dull pains in this region, he belches gas after meals—sometimes vomits; he has recurrent attacks of pronounced pain, his appetite is poor, his weight is usually decreased, and he is never well entirely.

In all these conditions about the gall bladder, whether there are stones or not, there can be, to my mind, but one safe and promising procedure, and that is by doing the indicated surgical operation—usually a cholecystostomy. The operation is safe, the relief is prompt, and the patient is usually permanently relieved. Even with the best surroundings and opportunities for treatment, medication in these cases should not be the chosen procedure.

4. Chronic pancreatitis is now receiving considerable attention, and it seems to be altogether probable that this disease may explain some of

the obscure symptoms which have been ascribed to indigestion. Formerly it was thought that chronic pancreatitis was generally associated with diseases of the bile tract area, but in a recent remarkable contribution by Deaver, in which he reports seventy-three cases, attention is called to the fact that only about half the number had gall bladder or duct trouble. He further shows by an analysis of his patients that most of the cases were in the male, whereas most gall bladder cases are in the female.

In chronic pancreatitis there is generally epigastric pain, nausea and vomiting, intermittent jaundice as cardinal symptoms. In addition to these there is decrease in weight, usually, but not always, a slight rise in temperature, and constipation. Many cases are very obscure and require careful, painstaking investigation in order to arrive at a diagnosis.

The treatment is cholecystostomy in order to obtain good drainage. A practical point, therefore, is, if there is difficulty in deciding as to whether disease of the gall bladder or chronic disease of the pancreas exists, the performance of a cholecystostomy is the indicated operation in either case.

5. Chronic Appendicitis.—Notwithstanding the oft-repeated charge that the appendix is often removed when such procedure is not necessary, I believe that many cases of intractable indigestion may be traced to chronic inflammation of it. I do not believe that it is often removed when the necessity does not exist. Much more often the opposite mistake—procrastination while awaiting typical symptoms of appendicitis—is made. Every surgeon has seen the marked improvement in cases of long continued indigestion with loss of weight and strength after the removal of an appendix which presented almost a normal gross appearance on the outside, but which, when it was incised, showed thickened, indurated walls, a stricture or an ulcer.

In conclusion, let me plead for a more careful analysis of the cases presenting symptoms of indigestion. Let us remember that in many of these patients—perhaps in the majority of them—digestive ferments and other internal medication will not relieve or cure. Let us remember that in an equal number the necessary surgical operation, properly done, will give radical relief.

DISCUSSION.

D. Walker, Shawnee.—Dr. Long's paper is too good to pass over without discussion. The compilation the doctor has mentioned is the old list we have had to deal with in our cases of chronic indigestion. These terms are mostly eliminated now by our present method of treatment of indigestion. We have used numerous things to give people for indigestion; pepsin, etc. Now we look more carefully to the cause of the trouble. We use to give patients different things, treating them for neuralgia, gastralgia, etc., of the stomach. Now we know that if the trouble is with the gall bladder it would be quite useless to give him pepsin. We must be sure where the trouble is before we prescribe.

Dr. W. E. Dicken, Oklahoma City—I think the doctor's paper was one that struck the keynote of all our stomach trouble. There are really only two things that cause stomach trouble, one is ulcer or carcinoma, the others are reflex. The diagnosis of one is very simple. If the patient has stomach trouble and is relieved by eating, he has duodenal ulcer of the stomach, whether or not he has hemorrhage. How important to care for this promptly when we know that fifty (50) per cent of ulcers of the stomach result in cancer of the stomach.

The liver secretes as much bile as the kidneys secrete urine. The gall bladder is only a safety valve. In case more bile is secreted than necessary it is held back in reserve by the gall bladder. Now, if the duct to the gall bladder is forced back into the pancreas, and we have pancreatitis. It becomes important to relieve the gall bladder, not only for the sake of our stomach trouble, but also to remove the danger of pancreatitis.

Dr. E. H. Troy, McAlester—This paper is so complete in itself that it is difficult to discuss it without repeating what is said in the paper.

Dr. White, Muskogee—I do not think that pain shortly after eating will always permit us to make a diagnosis of ulcer.

Dr. White also reported a case.

Dr. Long, closing—It was not contemplated to point out all the symptoms of gastric ulcer, nor would I think it wise to operate on the few symptoms pointed out. I can see very readily how hyperchlorhydria might cause pain.

I don't want you to think for a moment that I advised operation on the few symptoms I pointed out. We must be thoroughly satisfied that an operation is necessary. Sometimes it is necessary to do an exploratory operation. We should advise the patient why it is necessary to do this.

In case of duodenal ulcer we have little pain. In gastric ulcer we have pain very quickly after eating.

I thank you.

MISCELLANEOUS.

PITTSBURG COUNTY SOCIETY AND DR. WILEY.

Whereas, The Congress is now investigating the conduct of Dr. Wiley, charged with committing a technical error in an effort to secure efficient service for the department he represents, and

Whereas, It is our opinion, in common with that held by members of the medical profession generally, that Dr. Wiley is guilty of no deliberate wrong, and that his act in this instance, as in every instance of his official

life, was for the purpose of securing the best results for the whole people, and

Whereas, Dr. Wiley has given evidence in every act of his official life that he is not only honest, but a man of the very highest ability and courage, and peculiarly adapted to the successful prosecution of the duties of his office.

Therefore, believing that his retirement from his office at this time would be nothing less than a public calamity;

Be It Resolved, That we, the members of the Pittsburg County Medical Society, strongly urge the President of the United States, and all other officials interested, to not only retain Dr. Wiley, but to give him more authority in conducting the affairs of his office, firmly believing that such a course will meet the approval of all right thinking people and result in great good to all.

Signed,

T. J. LONG, M. D.

M. C. WILSON, M. D.

WM. FOWLER, M. D.

Committee.

PROSTATECTOMY

E. S. Judd, Rochester, Minn. (Journal A. M. A., August 5), gives an analysis of all the cases of prostatectomy operated on previous to April 1, 1911, in St. Mary's Hospital, Rochester, including 461 operations for benign hypertrophy, seventy-four for cancer, and seven for tuberculosis. Cancer and hypertrophy were noticed together in several cases. No specific etiologic factors were determined in these cases and the conditions calling for operation were twice as frequent in country dwellers as in those living in the city and only a small percentage had had specific infection. The majority were operated on between the ages of 60 and 70 years. Only eleven were under 45, and fifteen were over 80. Four hundred and seventeen of the 542 patients were married, ninety-four were widowers and nineteen were single. The average duration of symptoms before operation was 5.96 years. The aim was to operate on patients whose symptoms were dependent only on prostatic enlargement, but it was not always easy to determine this point. If only a slight amount of residual urine is found in the bladder by catheterization in a case having marked secondary symptoms without great difficulty in voiding little benefit can be expected from operation, which will be accompanied, moreover, with great risk. On the other hand, if a large amount of residual urine is obtained with the catheter (and atony is excluded) the case is one for prostatectomy, even though the tumor is small. In late years the mortality in the hospital has been materially reduced and better convalescence obtained by spending a little more time in preparing patients for operation. With a permanent catheter in the ureter

or through a suprapubic stab-wound the patient is in the same condition as after an operation so far as emptying the bladder is concerned. The secondary symptoms are relieved and the general health can be built up. The specific gravity becomes lower and operation should not be performed until it has risen again, which may take several weeks. As a rule, the Rochester surgeons do not consider it advisable, if the symptoms are slight and only two or three ounces of residual urine are found, to operate. Within the last five years they have used the cystoscope to great advantage in ninety-five per cent. of the cases in determining the presence of stone and selecting the type of operation. The perineal operation is the one ordinarily chosen, but the cystoscope may show conditions calling for a suprapubic operation. The mortality is not especially affected by the type of procedure. The suprapubic sinus as a rule is slower in healing but is less likely to be followed by painful complication. They have been able to trace 90 per cent. of their patients and nearly all of them report they are absolutely free from pain. In seventy-four cases of carcinoma the immediate results have been quite as good as in benign cases but, in such, operation should be advised only when obstruction and bladder symptoms exist. Several of the cancer patients are still alive after more than two years. Of the eighty-one operative patients who have died since leaving the hospital, thirty had carcinoma, and twenty are reported as having been well for some time and then dying of other trouble. Twenty-nine died from kidney lesions before the end of the second month and in nearly all of them the autopsy showed evidence of old nephritis with new nephritis superimposed. These patients, it would appear, had already had some sort of interference in kidney function before operation. The preliminary treatment is considered as the most important factor in the good results obtained during the past few years. By the use of the permanent catheter before operation in suitable cases they have been able to eliminate a considerable percentage of mortality from kidney disease.

THE ETHER RAUSCH.

In some text-books on surgery attention is called to a brief primary anesthesia occurring with the use of chloroform and ether. W. T. Coughlin, St. Louis (*Journal A. M. A.*, July 1), calls attention to the utilization of this brief general anesthesia in very short operations, and describes it, as practiced by Professor Lindner in Dresden, who had used it at the time for more than 5,000 times. The patient was placed on the table as for an ordinary anesthetic. "All instruments, drains and dressings, etc., likely to be used were ready and close at hand. All those present were required to be silent. The anesthetic took the mask—a large wire affair, such a one as that shown in the illustrations—and showed it to the patient, told the latter what was to be done and admonished him to have no anxiety or alarm, explaining that the only unpleasant feature was the smell of the ether. The patient was asked to raise his arms and to keep it raised as long as he could. Meanwhile the pad at the bottom of the mask was saturated with ether, the mask was placed

in position and the patient was told to breathe deeply. At about the twelfth inhalation the arm wavered and began to fall; the mask was removed and at once the operation was begun and quickly finished." This method has been used by him since, at the Washington University Hospital, with great success, for over two years and in over 200 cases. It can be given in a variety of ways without any special appliance. The thing to be remembered is that the ether must be administered with very little air. Coughlin objects to the use of the open mask because with it it is difficult to say when primary anesthesia has been induced and nausea may occur, which he has never seen with the ether "rausch." He recommends its use in all minor surgical operations which can be better done without causing pain. He has used it in opening abscesses, setting fractures, reducing dislocations, removing ingrown toenails, etc., etc. He would not employ it in chronic bronchitis, emphysema, marked arteriosclerosis, nor generally in disease of the pulmonary or cardiovascular system. He would not use it also in cases requiring more than five minutes' operation, or where general relaxation is necessary, or in case of pale, flabby children, where one fears to meet the "status lymphaticus."

SURGICAL OPERATIONS AND OBLIGATIONS.

In his chairman's address before the section on Obstetrics and Diseases of Women of the American Medical Association at its Los Angeles meeting, H. G. Wetherill, Denver (Journal A. M. A., July 8), takes up the subject of the responsibilities and opportunities of the gynecological surgeon. Surgery, he says, must be regarded as a choice of evils, and in recommending operation the surgeon must take account of the possibilities of benefit as justifying the the probable or known risks and the temporary or permanent disability that will be its consequence, and also the expense. Operations on neurasthenic and nervous invalids call particularly for the nicest surgical judgment and caution. The menace to modern obstetrics, gynecologic and abdominal surgery is the horde of self-trained individuals who have invaded the field and a service of reasonable duration as an assistant to an experienced surgeon and the broadening influence of years of general practice should be a prerequisite. He also speaks of the evils and possible abuses that come from the opening of hospitals to all sorts of practitioners and says that, while at least one-half the hospitals in this country are controlled by churches, unwarranted and even criminal operations are frequently performed within their walls. For this reason he pleads for rigid supervision and control and careful selection of those who are to have hospital privileges. Character should be among the most important qualifications as well as skill and competence otherwise. The proper organization of hospitals and co-operation of the physician and the management are also essentials on which he dwells and the importance of proper selection of the assistants and especially of the anesthetist, is emphasized. He has called attention before to the fearful abuse of so-called hypodermic stimulation during and after operations, and says that, with the reforms which he advocates it would rarely be needed or practiced. It should be the

Section on Obstetrics, Gynecology and Abdominal Surgery. The gynecologist must become a good abdominal operator, but he deplors the breaking down of the boundaries between this specialty and general surgery. Prolonged general surgical training does not tend to produce a skilled obstetrician and gynecologist, who knows just when to operate and when to abstain from operating. Operators, he says, are far too numerous, pathologists and diagnosticians far too few.

EARLY PULMONARY TUBERCULOSIS.

The too general failure of the medical profession to diagnose the early stages of active tuberculosis is made the subject of criticism by W. W. Brem, Cristobal, Canal Zone (Journal A. M. A., June 3), who says that the conclusion is unavoidable that the mass of the medical profession is delinquent in this regard. It is probable, he thinks, that the infection, if recognized and treated early could be arrested in most cases of tuberculosis. Such early diagnosis is possible, he maintains, even though the obvious symptoms may not be present and the patient appears only as a mild neurasthenic. The temperature observations in such cases would be very useful. It is important that the physician should thoroughly know the normal chest, and Brem notes particularly one or two slight abnormalities, such as a slightly louder breath sound in the left base and small areas of harsh breathing due, he believes, to approach of the relatively large bronchi to the surface and the thinness of muscle covering on these spots. The location of progressive tuberculosis is generally at the apex and one may see in the early stage slight drooping of one shoulder with wasting of the shoulder-girdle muscles, most significant one the right in a right-handed individual, or on the left in left-handed ones. The early physical changes, as shown by palpitation, percussion and auscultation, are described in some detail. In the latter it is of the first importance that the patient should breathe properly when auscultated. Brem's experience with the strong cutaneous and conjunctival tuberculin tests coincides with that of Hamman and Wolman. That is that the conjunctival test with 1 per cent. old tuberculin is safe when the proper care is exercised; that when it is positive together with suspicious symptoms or signs, the patient should be treated for tuberculosis; when it is positive without symptoms or signs, close medical supervision will be sufficient, and when the test is negative the result is not of great significance. Radiography in the hands of an expert is a valuable procedure for early diagnosis and most helpful in the confirmation of diagnosis by other methods and in indicating the extent of the disease. It cannot, however, supplant other methods. The combinations of symptoms which he has most frequently observed in an early case are: first, a persistent slight cough with or without a little morning mucopurulent expectoration, and with an afternoon temperature of from 99 to 99.5F. Rest in the hospital usually causes the fever to subside within a week. There is generally a slightly shortened high-pitch percussion note in the supraclavicular or in-

traclavicular or upper interscapular regions, and the apical outlines are a little narrowed on the affected side. The second group of patients feel run down and nervous, lack appetite and sleep badly. There may be no cough, expectoration or fever, but they have usually lost a little weight and the physical signs are generally like those of the first group. In the third group the onset is with a pleurisy, dry or otherwise, and usually with fever. The two conditions that are apt to cause confusion are influenza and neurasthenit. In the former the presence of influenza bacilli and absence of tuberculous ones, with the other tests, should clear up the diagnosis. Neurasthenit, Brem says, should never be diagnosed without testing for tuberculosis. As tuberculosis is one of the commonest of all fatal diseases, it should be early diagnosed, and our hope of its ultimate eradication or control lies in the education of physicians and their attention to this point.

A PROMISING AGENT IN HAY FEVER.

Dr. J. E. Alberts, of The Hague, Holland, undoubtedly performed an important service when he directed the attention of the medical profession to his new combination for the treatment of vasomotor rhinitis. We refer to the combination now known as Anesthone Cream, which has heretofore been briefly noticed in these pages, and which contains one part of adrenalin chloride to twenty thousand (1:20,000), and ten per cent. of para-amido-ethyl-benzoate, and is marketed in the form of an ointment.

Applied to the mucous membrane of the nares, Anesthone Cream has a persistent anesthetic effect, which affords marked relief in hay fever. As para-amido-ethyl-benzoate is only slightly soluble in aqueous fluids, its anesthetic action is prolonged. It does not have the poisonous effect of cocaine upon the protoplasmic element of cells, nor does it depress the heart. Furthermore, there is no tendency to "habit" acquirement.

The preparation came into considerable use during the hay-fever season of last year, the consensus of opinion being that it affords a very practical and satisfactory means of relief from symptoms due to hyperesthesia of the nasal mucous membrane, and without ill effects—an important consideration. The fact that the relief continues for several hours in some cases is worth remembering in view of the fleeting effect of most local anesthetics.

Anesthone Cream is supplied in a collapsible tube with an elongated nozzle to facilitate its application to the nasal mucosa, a portion of the cream about the size of a pea being applied three or four times a day, as may be necessary. It is market by Parke, Davis & Co. Whether, as an agent in the treatment of hay fever, it will attain the vogue reached by some other preparations put out by the same company—notably Adrenalin Chloride Solution and Adrenalin Inhalent, which have been before the medical profession for a number of years and thus have the advantage which pertains to priority—remains to be seen. At any rate it is worthy of a fair chance, which, of course, in the long run it is certain to get.

IOWA STATE MEDICAL ASSOCIATION BEGINS PUBLICATION OF JOURNAL.

Volume 1, Number 1, of the Journal of the Iowa State Medical Association, with Dr. D. S. Fairchild, Clinton, editor, and Dr. C. A. Boice, Washington, assistant editor, has been received.

Steadily and surely each state medical organization is entering the field with its own publication and we hasten to welcome this new one and wish for the Journal every success attainable.

STATE BOARD OF MEDICAL EXAMINERS JULY EXAMINATION REPORT

Name	School of Graduation	Year	%	Address
Blair Points,	Oklahoma Univ. Med. Dept.	1911	R 83	Okla. City.
Ralph S. Faris,	Hahneman Med. (Chicago)	"	H 85	Halfway, Tex.
Robt. E. Jameson,	American School Osteo.	1901	O 74	Perry, Okla.
G. C. Wallis,	American School Osteo.	1911	O 82	Poplar Bluffs, Ark.
E. A. Donaven,	University Med. Col. (K. C.)	1897	R 80	Pryor, Okla.
F. A. Detrick,	Medico. Chirug. (Philadelphia)	1903	R 81	Agra, Okla.
F. R. First,	University Med. Col. (K. C.)	1911	R 82	Stillwater, Okla.
W. T. Dardis,	University of Oklahoma	"	R 74	Okla. City.
M. H. Foster,	Vanderbilt University	1910	R 91	Oktaha.
J. A. Mullins,	University of Oklahoma	1911	R 82	Okla. City.
E. B. Thomasson,	Ft. Worth University	"	R 84	Hastings.
J. S. Jacoby,	Atlanta Col. P. & S.	1910	R 77	Okla. City.
Levi Murray,	Barnes	1911	R 76	Depew.
H. G. Crawford,	University of Nashville	"	R 87	Depew.
J. W. Ellis,	Col. P. & S. (Little Rock)	"	R 80	Little Rock, Ark.
T. O. Crawford,	Col. M. & S. (Denver)	1910	R 84	Beggs.
Elmer E. Darnell,	University of Oklahoma	1911	R 87	Foss.
E. W. Cavoness,	University of Texas	1910	R 89	Chickasha.
E. P. Allen,	University of Texas	1911	R 85	
V. M. Wallace,	University of Oklahoma	"	R 78	Gerty.
Walter B. Adams,	University of Oklahoma	"	R 76	Okla. City.
L. L. Patterson,	University of Oklahoma	"	R 80	Okla. City.
J. R. McLauchlin,	University of Oklahoma	"	R 84	Norman.
L. B. Torrance,	Col. P. & S. (St. Louis)	1909	R 79	Okmulgee.
F. J. Wikliemeyer,	Harvard University	"	R 75	Muskogee.
Roscoe Walker,	University of Columbia	1911	R 79	Norman.
Elizabeth Whitaker,	Herring Medical College	1909	H 87	Avant.
U. G. Hall,	University Med. Col. (K. C.)	1911	R 77	Wann.
Chas. R. Dever,	Ensworth Medical College	"	R 71	St. Joseph, Mo.
W. H. Smith,	American Medical College	1894	E 88	Waurika.
E. F. Bungardt,	University Med. Col. (K. C.)	1911	R 75	Kansas City, Mo.
J. C. Jenkins,	Med. Chirg. (Philadelphia)	"	R 76	Chicago.
H. W. Houg,	Missouri University	1908	R 85	Guthrie.
Wm. L. Moore,	Col. P. & S. (Little Rock)	1911	R 72	Dierks, Ark.
C. E. Clymer,	St. Louis University	1910	R 80	El Reno.
L. D. Hudson,	University of Nashville	1909	R 84	Copan.
Rex G. Bolend,	St. Louis University	1911	R 82	Okla. City.
T. E. Childress,	American School Osteo.	"	O 79	Nowata.
F. W. B. Rockett,	Baylor University	"	R 75	Swink.
Wm. B. Newton,	Chicago Col. M. & S.	"	R 87	Muskogee.

Owen C. Northup,	Col. P. & S. (St. Louis)	"	R	80	Blackwell.
C. A. Howell,	Tulane University	"	R	87	Okla. City.
J. A. Taylor,	Meharry Medical College	1908	R	70	Scott, Ark.
John P. Lorenz,	Col. P. & S. (St. Louis)	1911	R	71	Eufaula.
Thos. D. Hurley,	University of Arkansas	"	R	88	Pawhuska.
Leroy T. Waller,	Louisville Medical College	1906	R	77	Ryan.
Rufus L. Holt,	Vanderbilt	1911	R	90	Mangum.
Calvin B. Chambers,	Meharry Medical College	1909	R	72	Wagoner.
Richard A. Dodson,	Meharry Medical College	1909	R	73	Anadarko.
Isaac W. Young,	Flint Medical College	1900	R	79	Boley.
Earl H. Toole,	Homeo. Med. Col. Chicago	1897	H	81	Muskogee.

THOSE WHO FAILED

No.	College	Year	%
1	Tennessee Medical College	1905	66
4	University of Oklahoma	1911	76
5	University of Arkansas	"	59
9	American School Osteo.	"	76
10	American School Osteo.	"	72
18	Meharry Medical College	"	74
21	Col. P. & S., Little Rock	"	46
23	Memphis Hos. Med. Col.	"	77
26	University of Oklahoma	"	67
35	Ensworth Medical College	"	71
55	Chicago Col. P. & S.	1889	70
44	University of Nashville	1893	71
48	University of Arkansas	1911	72
50	Col. P. & S., Little Rock	1908	59
35	Flint Medical College	1911	67
56	University of W. Tennessee	1910	68
58	University of W. Tennessee	1911	70
50	Meharry Medical College	1907	69
62	Illinois Medical College	1911	46
66	Leonard Medical College	"	69
68	Louisville Medical College	1881	70
69	Keokuk Medical College	1903	59

Two men made the Honor Roll:

M. H. Foster of Vanderbilt Medical College, Average of 91 per cent.

Rufus L. Holt of Vanderbilt Medical College, Average of 90 per cent.

BOOK REVIEWS.

DIAGNOSTIC METHODS. Second edition revised. A treatise on Diagnostic Methods of Examination. By Prof. Dr. Hermann Sahli, Director of the Medical Clinic, University of Bern. Edited, with additions, by Nathaniel Bowditch Potter, M. D., Assistant Professor of Clinical Medicine, College of Physicians and Surgeons, New York. Octavo of 1229 pages, containing 472 illustrations; 1911. Cloth \$6.50 net, half morrocco, \$8.00 net. W. B. Saunders Company, Philadelphia and London.

This work is one of the largest on the subject of diagnosis ever brought into one volume, probably; it covers 1229 pages including the index and

would probably be considered more convenient if divided into two volumes.

When it is understood that it is the second edition of the translation of the fifth German edition its popularity will be appreciated.

As to scope covered, ninety-two pages are devoted to the pulse, blood pressure, arterial tension and the various types of blood pressure determining apparatus, and 169 to percussion in general, topographic lines, palpation, inspection, the necessary and varied types of instruments used in diagnosis of heart and chest affections.

The work contains an immense reference to the detection of the various abnormalities of the body fluids, chapters on microscopic examination of sputum, on examination of the abdomen, intestines, feces, and of the intestinal functions; chapters on the examination of esophageal, laryngeal, bronchial and rhinological conditions and special chapters on the diseases of nervous origin as well as chapters on the nerves of special sense and observations on cerebral localization.

The scope covered is wider than that of any similar book to the writer's knowledge.

It is stated that the work is not a compilation from various sources, but a statement of the author's observations and methods in the field of diagnosis.

WHAT TO EAT AND WHY. By G. Carroll Smith, M. D., of Boston, Mass. Octavo of 310 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$2.50 net.

This is a plain well written book on "What to Eat and Why," and the text follows the indications of the title closely in the avoidance of difficult formula, chemical combinations and derivations and adheres closely to the practical side of the dietetic question.

For these reasons the book will be most acceptable to the practitioner who has no time to inquire into the why and wherefores of dietary matters, but wishes an easily accessible and reliable authority for consultation.

The book is very practical in its application of dietary conditions and thus has a distinct value in its field.

BOOKS RECEIVED.

THE PRACTICAL MEDICINE SERIES—OBSTETRICS, VOLUME IV., edited by Joseph B. DeLee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School, with the collaboration of Herbert M. Stowe, M. D. Series 1911, Chicago. Bound in cloth, price \$1.25. The Year Book Publishers, 180 North Dearborn Street.

TRANSACTIONS OF THE FLORIDA MEDICAL ASSOCIATION FOR THE YEAR 1911. held at Tallahassee, Florida, May 10, 11, 12, 1911.

HEIRONYMUS FRACASTOR'S SYPHILIS, FROM THE ORIGINAL LATIN. A translation in prose of Fracastor's immortal poem. Printed on

hand-made imported paper; library binding. Crown octavo. The Philmar Company, Medical Publishers, Fidelity Building, St. Louis, Mo. Price \$2.00.

PRACTICAL MEDICINE SERIES. GYNECOLOGY. VOLUME IV. Edited by Emilins C. Dudley, A. M., M. D., Professor of Gynecology, Northwestern University, Medical School; Gynecologist to St. Luke's and Wesley Hospitals, Chicago; and C| Von Bachelles, M. S., M. D., Aassistant Professor Obstetries, Chicago Polielinic and College of Physicians and Surgeons; Gynecologist to the German Hospital, Chicago. Series 1991. Cloth, \$1.25. Chicago, The Year Book Publishers, 180 North Dearborn street.

REVISION OF ROSTER TO AUGUST 1, 1911.

(Names preceded by * were paid up and in good standing at the time of the annual meeting and were accidentally omitted or placed in wrong county list in making up the roster of members for the June issue.) Other names have been added since making the June roster.

Name	Residence	County
*Rollins, J. W.	Atoka	Atoka-Coal
Jackman, F. M.	Mead	Bryan
McCalib, D. C.	Utica	Bryan
Pate, J. D.	Durant	Bryan
Stringer, O. E.	Achille	Bryan
Barnwell, J. T.	Graham	Carter
Miller, G. E.	White Oak	Craig
*Bolton, W. D.	Clinton	Custer
Shaunty, J. N.	Carrier	Garfield
Gray, A. W.	Pauls Valley	Garvin
*Markham, H. P.	Pauls Valley	Garvin
Struble, Andrew	Pauls Valley	Garvin
Taylor, J. L.	Robberson	Garvin
Hennings, A. E.	Tuttle	Grady
Martin, C. G.	Amber	Grady
Winborn, T. H.	Tuttle	Grady
Hamilton, S. H.	Non	Hughes
Lett, L. M.	Dustin	Hughes
Baum, F. J.	Waurika	Jefferson
Sutherland, L. B.	Waurika	Jefferson
Watson, J. W.	Ryan	Jefferson
Miller, D. W.	Blackwell	Kay
Hancock, J. M.	Kendrick	Lincoln
*Lamerton, W. E.	Enid	Major
*Lukens, C. J.	Enid	Major
Holland, J. L.	Madill	Marshall
Hollingsworth, J. E.	Spavinaw	Mayes
*Fite, F. B.	Muskogee	Muskogee
Norvell, B. P.	Muskogee	Muskogee
Edwards, F. M.	Fairland	Ottawa
Beitman, C. E.	Skedee	Pawnee
Robinson, E. T.	Cleveland	Pawnee
*Walker, J. A.	Shawnee	Pottawattomie
Harris, A. J.	McAlester	Pittsburg
Lewallen, W. P.	Canadian	Pittsburg
Bartly, J. P.	Comanche	Stephens
Wilson, R. E.	Davidson	Tillman
Stephens, E. F.	Foss	Washita
*Templin, E. O.	Alva	Woods
Shoun, D. A.	Albert	Caddo
Williams, R. A.	Anadarko	Caddo

OFFICERS' DIRECTORY—OKLAHOMA STATE MEDICAL ASS'N.

President.....	Dr. C. L. Reeder, Tulsa
First Vice-President.....	Dr. James L. Shuler, Durant
Second Vice-President.....	Dr. J. W. Duke, Guthrie
Third Vice-President.....	Dr. H. M. Williams, Wellston
Secretary-Treasurer.....	Dr. Claude Thompson, Muskogee
Delegates to A. M. A.....	Dr. W. E. Wright, Tulsa, 1911-1912, Dr. J. A. Walker, Shawnee, 1911; Dr. E. S. Lain, Oklahoma City, 1912-1913
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SCARLET FEVER—A SHORT STUDY OF THE ETIOLOGY OF ITS SEQUELAE.

By Dr. Leila E. Andrews, Oklahoma City.

The identity of the cause of Scarlet Fever has not been proven but we are favorable to the opinion that it is of strepto coccie origin, and feel that we are well enough acquainted with the behavior of this infection to note in the study of the sequelae, valuable points which if given practical application will prevent many handicaps which children carry from this disease, not only to maturity but in most instances throughout life.

Given the disease, what etiologic factors do we note predisposing to sequelae? Even ten years ago, statistics proved that the children of the poor, those who lived in crowded quarters of our cities, where the climate was cold, the altitude low, humidity high, a small percentage of hours of sunshine per year; those of tubercular or syphilitic parentage, or suffering from the effects of a previous faulty nutrition—those were the cases that furnished the large percentage of sequelae. Today we do not go down the old category, but we look at the child itself, we examine its nose and throat and note the presence or absence of adenoids and enlarged tonsils, for with a knowledge of the pathology of these two conditions and their accompanying train of

findings, we can expect or not, otitis media, nephritis, endocarditis, or diseases of the joints.

The tonsil is situated on either side of the throat, in the sinus tonsillaris between the faucial pillars and has its origin in an invagination of the hypoblast at this point. Later, the depression thus formed is subdivided into several compartments which become the permanent crypts of the tonsil. Lymphoid tissue is thus deposited around the crypts, and the tonsillar mass is built up. The inner or exposed surface is covered with an epithelial mucous membrane while the outer or hidden surface is covered with a fibrous capsule.

The crypts early in foetal life show a great tendency toward ramification—all are lined with epithelium, sometimes becoming so deep that the cells from the surface layers cannot be thrown off into the mouth, but remain as a mass of degenerated cells filling up the lumen of the crypt and waiting to be forced en masse by the leukocytes from behind, which migrate through the epithelium. It is to the epithelial ingrowth that we can give credit as being the prime factor in the formation of the tonsils. According to Ballenger—

“This ingrowth which partly mechanically compresses the meshes of the connective tissue, and partly causes proliferation of the connective cells and vessels by the slight irritation it produces, makes it easier for the leukocytes to escape from the thin walled capillaries and then after escaping causes them to be detained in the finely meshed connective tissue longer than in other situations. As the leukocytes are well supplied with nutriment they divide by mitosis and at a late stage in development, “germ centers” are formed where a special arrangement of connective tissue and vessels favors the process of division.”

The free surface of the tonsil, including the crypts, is covered with stratified pavement epithelium—the deeper layers columnar, and the superficial pavement, and it is to this surface that we ascribe the power of absorption of the bacteria—whether by the cells, or in the tissue between cells, is not settled.

The lymphatics originate in the tonsils themselves draining into the deep cervical chain beneath the sterno cleidomastoid muscle, from thence to the thoracic glands, and finally into the thoracic duct.

Literature is rich in proof that on account of the anatomy and the histology of the tonsil we find in it a portal of infection for many diseases in remote parts of the body.

Let us now consider Adenoids. They are made up of hypertrophied lymph gland tissue located most frequently on the superior and posterior walls of the epipharynx—although often found into the fossae of Rosenmüller and to the mouth of the Eustachian tubes. The same histologic findings are present as in the tonsil. Our chief interest in this discussion is not so much the character of the gland itself, as its mechanical effect upon the Eustachian tube. It is a common clinical experience that the orifice of the tube may be so encroached upon by the vegetations, as to occlude in various de-

grees its lumen. This may produce by rubbing of the opposed walls of the tube, on account of the swelling from without, an atrophy of the cilia of the epithelial lining, the absence of the cilia therefore permitting easy ingress of the infected secretions into the middle ear.

During the simple act of coughing, sneezing and of mastication in a child with well pronounced growth of adenoids, the food or infected mucous is thus carried directly into the Eustachian tube. The tube with the lumen partially occluded and an inactive epithelial lining offers no resistance to the foreign matter but acts rather as an encouraging medium through which infection is carried into the middle ear.

Tonsils if not enlarged, really do no harm, according to our best throat men, the free surface with its epithelial covering really acts as a barrier to infection for the leukocytes are active, and put up a most excellent line of defense—but practically, tonsils do not stay unenlarged—the crypts become occluded, and as the bacteria enter and meet with no opposition it is but a short time until the tonsil is transformed from a guard of safety to a portal of infection. This apparently innocent tissue can thus be made a reservoir of bacteria.

The staphylococcus, the pneumococcus, the Klebs Loeffler the Influenza and Tubercle bacilli are all constantly found present in old enlarged tonsils without producing any apparent constitutional symptoms.

Now let us consider the child who is ill with Scarlet Fever with a clean throat, one which presents patent Eustachian tubes and thus a healthy lining of the cavity of the middle ear: this child has no obstruction to the ventilation of the air chambers of the ear, and we are told by the aurist that this is a most important factor in dealing with infections. The whole surface of the tube and of the middle ear is veritably lined with an active defense in its healthy active ciliated epithelium and its under layer guarded by the leukocytes, so that a further extension is hardly possible. But the child who has a throat not only mechanically obstructed, but one with infection, already present in the tonsil, let this child develop Scarlet Fever and the avenues are all open, to the ear, through the general lymphatic system and the vascular system into the channels through which infection is spread in all parts of the body. It is no matter of mere coincidence then that we have a following acute articular rheumatism, a meningitis, an endocarditis, a nephritis, or a late development of osteomyelitis, but simply what we could expect.

Deaf mutism is accounted for in this manner. The middle ear is infected, through the meninges the infection is carried from the circulatory system to the labyrinth and the bones of the inner ear are often so surrounded by the infection from both within and without, as to be discharged entirely from the ear.

Sequelae are really preventable, but not always after the onset of Scarletina. It is the duty of the physicians all over the country to practice a higher type of preventable medicine. We should enlighten the public upon these

matters. Inspection of schools should not only be favored, but we should be at the front in urging its adoption in every school of our State. Let the general practioner join with the nose and throat specialist, and both with the public in pointing out a way to prevent diseases and deformities, which so seriously handicap a class of patients who by virtue of their age are more dependent upon us.

EMPHYSEMATOUS GANGRENE OF UTERUS, BLADDER AND RECTUM

Dr. John W. Riley, 119 West 5th St. Oklahoma City.

Gangrene of the uterus with gas formation is most commonly caused by the *Bacillus Aerogenes Capsulatus*.

According to the literature this is not an uncommon pathological condition, yet I have not previously seen a case, although cases with uterine sepsis following criminal abortions and confinements are frequently seen.

The *Bacillus Aerogenes Capsulatus* is widely distributed in the dust, soils, intestines and probably in other parts of the normal living body.

It is said that it is especially prone to set up infection during criminal abortions and where the ordinary antiseptic precautions of obstetricians is neglected.

On account of its infrequency I wish to report the following case, believing that it may be interesting to many.

Mrs. S—— 28 years old, was the mother of five living children and had one miscarriage. Had the usual diseases of childhood, she and the rest of her family had typhoid fever last fall and all had recovered from same.

She was admitted to the city hospital February 18th, 1911, and gave the following history: For three months she had not menstruated regularly. She had been examined several times and was told that she was not pregnant.

On February 15th she had been curetted, and became so ill three days later that she was sent to the hospital.

Examination of patient at the hospital showed a most foul discharge from vagina, uterus enlarged to the size of a four months' pregnancy and hanging from the softened dilated cervix were putrid masses of black gangrenous material; the mucosa of the vagina was nearly a black color.

A mass the size of a lemon was palpable in left broad ligament.

Patient appeared extremely ill, suffering severe pain; the abdomen was distended; skin of abdomen was tender to the touch, and had an emphysematous like feeling. The skin of the abdomen from the umbilicus to the mid thighs appeared black and blue. It also crepitated on palpation.

Pulse 90, irregular, fair volume. Temperature 101.4 F.

Patient begged to be operated.

Operation.

Upon incising the skin in the median line, the subcutaneous fat was black and emphysematous in appearance; had a pronounced cadaveric odor, and the emission of gas, as it was incised. Sheath of the rectus soft and friable and easily torn. Upon incising the peritoneum the cadaveric odor was the

worst that I ever observed on a living subject, in fact one of the nurses had to leave the operating room.

The peritoneum covering the bladder, uterus, rectum and lateral walls was deep black. Uterus about as large as a grape fruit. The mass in left broad ligament was a necrotic extrauterine.

Clamps was applied to each broad ligament which were so friable that they cut through the structure like a pair of scissors.

The uterus tubes and ovaries were lifted out of the pelvic fessa like a tooth from the alveolar process.

It was not necessary to tie a single vessel.

All the necretic peritoneum was resected and supra public and vaginal drainage inserted.

Normal salt solution was given under each breast. Smears made from uterus.

February 19th, temperature had dropped to normal, discoloration had extended upwards to breasts and downward to knees.

February 20th, right breast red and inflamed. This was opened along outer side and a putrid gaseous fluid drained out, smears and cultures taken from fluid.

February 24th, fecal fistula drained through vagina.

February 26th. Urinary fistula drained through vagina.

Patient gradually grew weaker and died of an aeute endocarditis March 2nd. At this time all discoloration of skin had disappeared and breast incision had closed.

March 2nd. Autopsy shows that gross pathology of peritoneum had disappeared, a slough had occurred in rectum and the posterior wall of bladder had sloughed away.

Peritonel adhesions had walled off pelvic from abdominal cavity.

Permission not given to open chest.

Examination of cultures taken from uterus by City Bacteriologist, Dr. Dailey, shows almost a pure culture of *Bacillus Aerogenes Capsulatus*.

He inoculated a vein in a rabbit's ear with fluid from the breast and killed the rabbit in three minutes, and placed rabbit in incubator for three hours. Post mortem of rabbit in three hours after death and inoculation, showed the internal organs to have a sponge-like appearance from the formation of numerous gas bubbles throughout the organs.

The blood in heart and vessels was foamy.

Examination of smears taken from the rabbit shows the presence of numerous *B. Aerogenes Capsulatus*.



EMPHYSEMA TOUS GANGRENI

CHRONIC ULCER OF THE DUODENUM.

Horace Reed, M. D., Oklahoma City.

Chronic Ulcer of the duodenum is a surgical disease. Next to the appendix and gall bladder I believe that it stands uppermost in frequency of involvement, and therefore next in importance. We may find that even the gall bladder will eventually yield its place of importance, surgically considered, to the duodenum. In my operative experience with duodenal ulcer I have found the gall bladder constantly involved. The degree of involvement varied from the mild type of cholecystitis to stone formation. The question which has arisen in my mind is this: How far does a duodenal ulcer predispose to infection of the bile duct? Certainly as an etiological factor in the production of gall bladder disease, pathologic changes in the function of the duodenum must be considered.

We have been trying heretofore to connect cholecystitis with some previous gastro-intestinal or general infection. Failure in a large proportion of cases thus to find an explanation for such an infection has led us to seek some other and more constant finding which could fill the discrepancy. Nearly or quite all gall bladder cases will contend that their trouble originated in the stomach. Even since our attention has been called to the close connection existing between ulcer of the duodenum and gall bladder disease, I have allowed, in several instances, the old line of reasoning as regards the reflex action of such diseases on the stomach to lead me in error. This is vividly illustrated in a case which I operated in a neighboring city during the last year. The patient had been previously examined by two or three good clinicians, all of whom had diagnosed gall bladder trouble. I found no reason to disagree with their diagnosis.

Just before the patient was taken to the operating room she called me to her bed and wanted to know if I was sure she had gall bladder trouble. When questioned concerning why she asked, she replied that she was sure her trouble began in the stomach. Our explanation was made according to the accepted theory. Imagine our chagrin when, on opening the peritoneum, a large indurated ulcer of the duodenum was visible in the field. The gall bladder was involved, but only mildly so, and it was drained. We had not gone prepared with the proper instruments for doing a gastro-enterostomy, and our embarrassment was only somewhat relieved by the fact that by the time the gall bladder work was finished the patient's condition under the anesthetic was such that a further prolongation of operation was inadvisable. She was cured of her complaint so far as the gall bladder is concerned, but she yet has her "stomach trouble."

It is well known that duodenal ulcer more frequently perforates than

gastric ulcer. In the production of peritonitis, then, perforation of the duodenum must be considered. The frequency with which it takes place is estimated at ten per cent in all cases of ulcer. Some of those who hear this will probably say that in a great many years of general and extensive practice they have never seen a case of perforation of the duodenum. Such a record is possible, but not probable. It has not been many years since we talked about idiopathic peritonitis. The term was soon dropped as being unscientific, but the fact remains that we frequently see cases in which clinically we cannot fasten the diagnosis onto the appendix, gall bladder or tubes, as being originators of the same.

Further, there are numerous cases explored every year in which the point of perforation cannot be found, and the operation ends in the removal of an innocent looking appendix, in the hope that it might have been the offender.

A diagnosis of perforation of the duodenum is not easily made, especially from the clinical findings. One must rely almost solely on a carefully taken history. This is not always obtainable from the patient who has general peritonitis. There are so many points in common in a comparison of the findings in cases of peritonitis from perforation of the duodenum, gall bladder and appendix, that errors in diagnosis are to be expected. Moynihan collected 49 cases of perforating duodenal ulcer. In 18 of these cases a diagnosis of perityphilitis had been made (Schlesinger). Even when ante-mortem exploration is made, unless the surgeon be extraordinarily diligent in his search, a "tucked under" perforated duodenal ulcer may be overlooked.

The realization of the ideal in medicine or surgery is to be had in prevention. Once a disease or pathological process is established, we bend our efforts towards its eradication and a restoration to normal, or as near normal as the changes which have already taken place will allow.

Chronic duodenal ulcer is a disease which, without complications, renders a patient's existence more or less miserable, and of itself deserves treatment. Past experience has abundantly demonstrated that internal medication accomplishes little or nothing in curing it, and offers no assurance against a recurrence of attacks. On the other hand, the brilliant results of Moynihan and numerous others have shown that surgery will produce permanent cures in at least 90 per cent of all cases; improvement in a majority of the remainder; and in no instance should the patient's condition be made worse. The mortality is remarkably low and with a careful technic should not exceed that in interval operation for diseased appendix.

The results obtained in the author's cases, while not based upon a sufficient number to justify conclusions, are indeed most satisfactory. The operation performed is, gastro-jejunostomy, posterior. On this point all surgeons are agreed. Some go farther and resect the ulcer. Others resect the portion of the duodenum which contains the ulcer. If pyloric ulcer complicates ulcer of the duodenum, there would be good reason for a resection of both, and this complication is not infrequent. But where the duodenum alone is affected, we see no reason why a resection should be made. Pyloric

ulcer is frequently the seat of primary cancer. Primary malignancy of the duodenum is indeed rare, and it has not yet been demonstrated that duodenal ulcer is even the exciting cause of malignancy. Certainly resection of the duodenum adds much to the danger of the operation and until it can be shown that the benefits to the patient in its removal are positive rather than theoretical, I shall oppose such a procedure.

The pre-and post-operative treatment of "stomach" patients does not materially differ from that generally prescribed in abdominal cases. I mention this because of the general impression which seems to prevail that food should be withheld for a much longer period following stomach operations than in other cases of abdominal surgery. If the suturing has been properly done, there need be no fear of hemorrhage or leakage. Vomiting is no more an essential part of the convalescence than in other abdominal operations.

If now, it is sufficiently established that duodenal ulcer is an important surgical disease, there yet remains that which from the physician's standpoint must ever be of most interest, namely:

DIAGNOSIS.

There are few diseases which heretofore have offered more difficulties in the way of diagnosis than has duodenal ulcer. This has been the result of faulty text book teaching. Since we have come to have a better understanding of the symptomatology we marvel that we have allowed ourselves to be kept so long in error. The fact is that there are few diseases in which the symptoms appear in such regular order. The patient usually begins his history by saying that for several years he has had more or less stomach trouble. The period may be as short as six months, or, it may cover practically a lifetime.

There are at first fairly long periods of complete, or relatively complete, absence of symptoms. As time goes on these periods become shorter until finally the patient reaches that stage where these intervals represent only a period of tolerance. Early in the history the patient recalls that the attacks occurred more frequently in the fall of the year, and that during the spring and summer months little or no symptoms were present. Later, however, the attacks would come on with little provocation, such as slight indiscretion in diet or exposure to sudden temperature changes.

Just as typical as the history outlined is the description of the individual attack. There is a burning, boring sensation in the epigastric region. Usually nausea, rarely, vomiting. Belching of sour, scalding material. Appetite at first variable, later, ravenous. Taking food relieves pain from two to four hours. The more chronic cases, observing this fact, may have formed the habit of carrying food in their pockets to be eaten when the pain comes on. Bowels are invariably irregular, constipation, or constipation alternating with diarrhoea. The majority of cases will report having had melanotic stools. Such in brief is the history obtained in uncomplicated duodenal ulcer.

There is little to be ascertained from the physical examination. There

is usually tenderness on deep pressure, and consequently some muscular rigidity in the right epigastric region. The well-trained clinician may be able to palpate a large indurated ulcer of the duodenum. The stomach is usually slightly dilated. Test meal shows atony. Hel. is nearly always diminished and organic acids are present. Total acidity not above normal, usually below.

Since gastric and duodenal ulcers frequently coexist, it naturally follows that a confusion of symptoms will render diagnosis difficult. From a surgical standpoint it only needs to be shown that there is a duodenal ulcer. Whether gastric ulcer also exists is immaterial so far as the advisability of treatment of duodenal ulcer is concerned. It has yet to be shown, however, that uncomplicated gastric ulcer, per se, is better handled by surgery than by medical measures.

We have already mentioned some of the sequellae of duodenal ulcer. There remains one more, namely, mechanical obstruction of duodenum due to cicatricial contraction at the site of ulcer. We have purposely avoided mentioning this phase before, for the reason that it must be considered as an avoidable complication. Such a contraction can only take place after prolonged and extensive ulceration and, therefore, after the patient has been for years a sufferer. The alert clinician should anticipate such an outcome, and by such anticipation avoid it by timely surgical treatment. When once a chronic appendicitis is diagnosed no one thinks of waiting for a violent attack which will imperil the patient's life, before advising surgical interference. In chronic duodenal ulcer, a disease in which there is just as little excuse for attempting medical treatment and in which surgical measures give such satisfactory results, we find very little, if any, less reason for procrastinating than when the appendix is diseased.

THE X-RAY A SOLUTION OF SOME FRACTURE PROBLEMS.

By E. S. Lain, M. D., Oklahoma City, Aug. 9, 1911.

We have heard this expression many times from the general practitioner, "I have more anxiety as to the sequelae of my fractures and dislocations than any other part of my work." The question naturally suggests itself: Why is this the case? Why burden our minds for a longer period, or have greater anxiety as regards a fracture than were it a perfectly normal and prompt labor?

Since having ourselves practiced general medicine and surgery for a period of about nine years, during which time we presume to have handled an average number of fractures and dislocations, and, considering the opportunities which our present specialty, in which we have been engaged for the past three years, affords, we trust you will permit us to offer a few suggestions and deductions, many of which are fully verified by Radiographs, a few of which we have selected from our cabinet file of negatives and hereto append. For all of these cases, and for many deductions we are indebted to our friends of the Profession in this city and state.

We have selected only those injuries in which errors of diagnosis are most common, and those cases in which the reputation and good favor of the attending physician are largely dependent upon the prognosis.

Those physicians who make a practice of subjecting or demanding a Radiograph of all cases of bone injury in which there may exist the slightest doubt as to the exact location or extent of the injury we believe will fully agree with us in the assertion that the Radiograph is worth many times its cost to the patient, and in all cases is the most effective Liability insurance to the attending physician.

This conclusion is being verified almost daily in the lamentable epidemic of damage suits which have been sweeping over our cities the past few years until now it is extending into the rural districts. The X-Ray negative or Radiograph is the autopsy of the case, which invariably proves its further value to the same physician in the next case of a like injury.

You notice we mention only the Radiograph, for it has long since been clearly proven and repeatedly stated that a fluroscopic examination, except in a few injuries of the distal extremities, is not only worthless, and subjects the patient to greater danger of being burned, but is frequently deceptive and causes an oversight of perhaps a major injury.

A fracture at the ankle, we have observed, is not a typical "Potts' Fracture" in perhaps 40% of the cases in which it is so diagnosed. Frequently the fibula is fractured obliquely upward and outward from two to four inches above the point of maleolus, with a splitting of the lower extremity of the

tibia, without any fracture of internal maleolus. And in quite a number of cases also, a third fragment of one or two inches in length from the inner surface of the fibula, near the junction of the two greater fragments, makes, of itself, a wedge to increase the inter-osseus space. Particularly is this true where a fracture of both fibula and tibia has occurred. In such cases only an open operation can prevent much deformity, even after the plaster cast or splints have been removed. See Fig. 1.

Another fracture at the ankle occurring in an adult and not at all uncommon when a person has been thrown violently upon one foot. This also is a fracture impossible to positively diagnose without the X-Ray (frequently diagnosed as only a sprained ankle) viz. fracture of the Astragalus, most frequently at its neck. See Fig. 2.



FIG 1: Fracture lower end of Tibia also fibula, 4 inches above end with a third fragment intervening.



FIG 2: Fracture neck of astragalus and post articular surface, also fracture of base last meta-tarsal

It may be a chipping only of its sides or posterior parts, thereby involving a part of its articular surface. See Fig. 3.

The mystery of "flat-foot," which many times follows a so-called "Potts' fracture," is, we believe, in a measure solved. Our observations in Radiographing of such fractures has proven conclusively to our own minds that the "flat-foot" is a natural consequence of a fracture of the neck of the Astragalus, and possibly also a portion of the Os-Calcais, and the stiff, and always more or less painful ankle, is due to a fracture having occurred to some part of the articular surface of said bone.

We have learned that a common error of diagnosis—made even by some of our best surgeons—is mistaking a fracture of the head of the humerus,

either at its anatomical or surgical neck, and also its dislocation, as only a dislocation of the shoulder. See Fig. 4.

Indeed, what surgeon is able in every case of a very muscular adult or child, or may be a female with large pendulous breasts, to differentiate? You say, "Crepitus?" Nay, perceptible crepitus is not the rule in such cases, but rather the exception. See Fig. 5.

Another very distressing problem in the retaining of a dislocated head of humerus is solved by the X-Ray; namely, a fracture of the rim or border of the glenoid cavity. It is not as rare an occurrence as many text-books have led one to believe. See Fig. 6.

In such cases retention by ordinary dressings is next to impossible.

Fracture of the spine, or wing of the scapula, is also frequently demonstrated by the Radiograph whereas it may be overlooked upon physical examination.

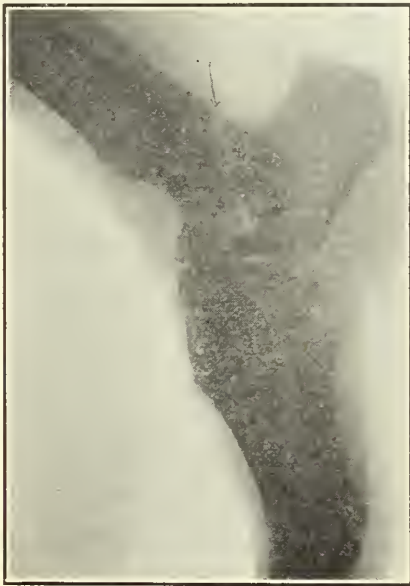


FIG 3: Fracture only posterior surface of astragalus.



FIG 4: dislocation of head of humerus also fracture at anatomical neck

Next, let us consider briefly the elbow. I hear you say, "Well, the elbow injury or fracture is easy of diagnosis, but we should always be very cautious of prognosis." "It is not so muscular and I can most always feel the bony points, the condyles and the olecranon."

But why, may we ask, should we be more cautious of prognosis, even after only an apparent backward dislocation, with no perceptible crepitus? And why, in a majority of cases do we see for months or perhaps years following a more or less amount of ankylosis?

First, let us assert, that a "strain" of the elbow, followed by a considerable amount of swelling, without there having also occurred a fracture of

some of the parts, is extremely rare. These so-called "strains" are, in most cases, as we know, followed by an impairment of joint motion. If the majority of these cases were Radiographed within the first four or six weeks we should find that a slight fracture had occurred at one of the condyles, usually at the epiphyseal line of the external or the head of the radius. See Fig. 7.

The most common undiagnosed fracture at elbow is the head of the radius. See Fig. 8. In the latter fracture we not only have resulting a partial impairment of the hinge motion of elbow, but also of the pronation and supination of the fore-arm.

This fracture of the head of the radius is most frequently only a chipping or separation of from one-fourth to one-half of the head. The line of fracture running through its articular surface, being followed by Nature's very super-



FIG 5: Fracture of surgical neck of humerus without perceptible crepitus.



FIG 6: Fracture posterior rim of glenoid cavity.

fluous attempt at repair, is demonstrated by the X-Ray to be the cause of this so common ankylosis.

On the other hand we also see some of the most mutilating fractures at the elbow, or perhaps a compound fracture, followed by a small amount of deformity and a fairly good mobility of the joint. In these cases the liberal supply of reparative bone does not, fortunately, greatly infringe upon the articulating surfaces or deposit within the olecranon fossa.

A fracture of the olecranon does not, as a rule, present many phases which may not be made out by palpation.

Most of the fractures and dislocations at the knee joint are proven to be not materially unlike those of the elbow, and so we shall not dwell thereon.

We shall only mention that an incomplete fracture of the patella, or a detachment of either its superior or inferior ligaments, may also be undiagnosed until later resulting callosities or impairment of motion.

The length of our paper will not permit our going into the problems frequently met in the diagnosis of fractures at the hip joint. The objective symptoms are, in our opinion, more to be depended upon than in those of the shoulder or elbow. However, we shall state that the so-called "impacted fractures" are in our observations much more rarely found than we are led to believe by the amount of space devoted to same in our text books upon surgery. Neither do we frequently find the intra and extra-capsular fractures clearly defined, but on the other hand, we learn that they are frequently oblique and may extend both intra and extra-capsular.

In conclusion we must not forget to mention the not infrequent serious trouble and embarrassment as a result of non-unions, deformities, and a six or twelve weeks later development of a Traumatic Neuritis. Non-union is most frequently due to one of two causes—either the intervention of some



FIG 7: Fracture of the condyle of humerus, with only swelling and pain immediate symptoms.



FIG 8: Fracture through and splitting head of radius.

tissues between the two ends of the bones; or, to some pathology of the bone. The latter is not of so rare occurrence as to be forgotten.

We believe that the clinical diagnosis of an imperfect apposition of the parts is not so apparent by the objective symptoms as by those of the subjective, such as continuous discomfort and pain at the site of fracture. This is in a majority of cases a signal of an imperfect apposition of the parts.

Lastly, not a small problem, and one which on account of its lateness of development is not always solved by the Radiograph, is, Traumatic Neuritis.

A very common precursor of this serious disease is a dislocated shoulder. It may follow a simple, easily-reduced, subluxation. On account of the adjacent brachial plexus an injury to one or more branches has occurred which results in this painful and distorting disease. The patient feels sure that the shoulder has never been set or reduced properly, and persists in informing his surgeon until the surgeon himself begins to doubt, and eventually has to forego the loss of this patient to the gain of some self-styled "Doctor" who finds all disease or pain due to a displacement of bone or nerves. Many of these neuroses are, however, due to an improper apposition of the parts of bone, or more frequently due to a compression of nerves within its cartilaginous welding.

Finally, let us repeat the statement previously made by Radiologists, viz. The X-Ray demonstrates that perfect apposition does not exist in the majority of cases of reduced fractures, though beneficent nature makes good union. This being true, however, does not relieve the surgeon's moral obligation to give his patient the very best results by first making a clear and correct diagnosis, leaving no inexplicable conditions existing. And, allow us to repeat, wherever accessible, the X-Ray will prove a solution for many of these problems.

THE WASSERMANN REACTION; ITS PRINCIPLES AND TECHNIQUE.

By C. J. Fishman, B. S., M. D., Oklahoma City.

The importance of an accurate method for the diagnosis of obscure forms of syphilis is a matter of appreciation to all medical men. Although a constitutional disease, it has hitherto been impossible in a large number of cases, to make a definite diagnosis unless some visible manifestation of the disease, such as skin, mucosal, or other apparent gross lesions were found to be present. Hence the announcement that Wasserman proposed, led many workers in serology to verify his discovery by an extensive comparison with clinical findings.

The Wassermann reaction is based upon the ingenious principle expounded in the Bordet-Gengou phenomenon, and by actual clinical comparison it has been shown to give us a very satisfactory means of diagnosing syphilitic affections, even in cases that were infected years ago.

When a patient is affected by typhoid fever, for example, in order to protect his organism, he produces in his body a substance which neutralizes the poison of the invading organism. This is more beautifully shown in the production of a specific antitoxin in case of a spontaneous recovery of diphtheria. Not only will the body react to bacteria, but also to the injection of cells from other animals as well as to certain acellular vegetable poisons.

HEMOLYSIS. The red blood cells of animals when put in contact with various substances are changed so as to set free their hemoglobin, the stroma also frequently going into solution. This phenomenon is known as **HEMOLYSIS**. Many substances are hemolytic for red blood cells; such as, dilute acids, alkalies, and certain salts. Fresh blood serum of certain animals is hemolytic for the erythrocytes of some other species of animals.

In vitro, hemolysis is manifest by the changes which take place in the appearance of the suspension of the blood cells. A suspension of red blood cells in physiological salt solution has a bright orange-red appearance, and when the cells settle to the bottom either by centrifugation or by standing, the supernatant fluid is clear and colorless and the red cells still contain their hemoglobin. After hemolysis has taken place, the suspension becomes deep red and transparent, the hemoglobin being in solution and diffused out of the cells that were hemolysed.

Hemolysis by serum results from the combined action of two distinct serum factors, besides of course, the presence of the red cells to be acted upon. The first of these is known as "AMBOCEPTOR," and the second as "COMPLEMENT."

Complement is present to a certain extent in the sera of all animals, but

that of the guinea-pig is most constant in its complement content and is capable of substituting that of many other species of animals. This substance is very unstable, being easily and completely destroyed by heating at 55 degrees C. for twenty minutes, and within a few days when kept at room temperature.

A serum which is fresh is known as an "active" serum. The destruction of complement by heat is known as "inactivation." The heated (inactive) serum can be "reactivated" by the addition of fresh normal serum to introduce the complement which has been destroyed by heating.

The presence of amboceptor in the blood is much less constant than that of the complement, and when it exists normally is known as natural amboceptor. One serum may frequently contain several natural amboceptors, although to a limited extent. For example, in a single species of serum may be found amboceptors against the red blood cells of the rabbit, sheep, hen, frog or human corpuscles; but it may vary in the amount of each.

Amboceptor may be produced or increased in the serum of animals by immunization, or injecting repeated and increasing quantities of washed blood cells from some other species of animal. This is then known as artificial or immune amboceptor. Thus, a rabbit may be immunized against sheep, bovine, human, or hen corpuscles so as to produce a serum which is highly lytic or poisonous against the type of red blood cells with which the animal has been immunized. The serum of a rabbit immunized against the corpuscles of a hen will dissolve only hen corpuscles and not those of sheep, bovine, human, or any other corpuscles. This phenomenon takes place only in fresh unheated serum; for the complement which it contains and is necessary to complete the reaction of hemolysis, is destroyed by heat.

Hemolysis, then, is caused by the specific coordinated interaction of the amboceptor and complement of serum upon erythrocytes so that the hemoglobin is set free and the stromata sometimes dissolved.

Three factors are required for this reaction to take place:

- (1) The cell to be destroyed.
- (2) The substance (poison to the cell) capable of doing this, known as amboceptor, and
- (3) The completing body, or complement, without which the reaction cannot take place.

This process of interaction is a specific process, and may be represented in its specificity by a locked door which we are to open. The lock we may allow to represent the cell; the key, the amboceptor; and the hand to turn the key, the completing body or complement. The lock must have its specific key to fit it; no other key will do; while any capable hand may turn the key and thus complete the reaction (complement). So the specificity lies particularly between the cell and its amboceptor one with another, while the complement may be suitable to react with various other processes.

This phenomenon is moreover a quantitative one and may be represented by the following equation which we will call Equation A:

Standard Suspension RBC plus 1 Amboceptor Unit plus 1 Complement Unit equals Complete Hemolysis (in 2 hours at 37 degrees C.)

In practice the complement is always in excess, and the suspension can of course, be made of relatively constant value so that the amboceptor must always be standardized.

ANTIGENS AND ANTIBODIES. Similar to the production of hemolytic amboceptors or antibodies for the red blood cells, amboceptors for bacteria may also be obtained by repeated injections of bacterial substances into the body of an animal. The immune serum is then known as bacterial amboceptor. When bacteria are brought in contact with their specific bacterial amboceptor, they absorb the latter and become sensitive to the dissolving action of the complement. This phenomenon is known as **BACTERIOLYSIS**.

Also certain unorganized protein bodies when injected into animals elicit a similar response and give rise to specific immune products known as "precipitins." Serum containing a specific precipitin when mixed with a solution of the protein against which it is immune, will cause a precipitate to form. When mixed with other protein substances, precipitation does not occur. This is also a specific phenomenon.

The substances injected which give rise to specific reaction products are known as **ANTIGENS** and may be either red blood cells, bacterial cells, or unorganized protein substances. The specific reaction products formed by the injected animals are called **ANTIBODIES**.

The common example for the determination of the specificity of bacteriolysis is in the well known Widal reaction in which a known antigen (bacteria) is placed with unknown antibody (patient's serum) to determine whether or not the specific antibody (immune body) is present.

An important example dependent upon the phenomenon of specific precipitin reaction is the determination of the species of animal from which an unknown blood specimen may have come. Artificial antibodies are produced in rabbits by injecting each with a blood serum from a different animal species. The unknown blood is dissolved in physiological salt solution and put in contact with the series of known antibodies (precipitins). The antibody which produces a precipitate must be the anti-body prepared from the same species as that from which the unknown specimen of blood is derived, according to the law of specificity.





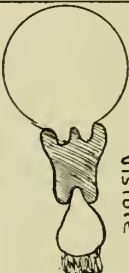


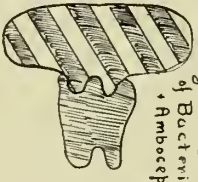

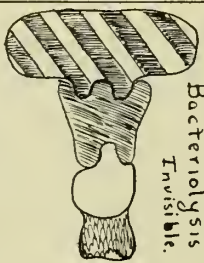
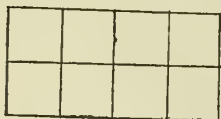
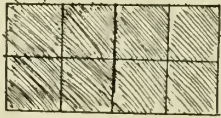
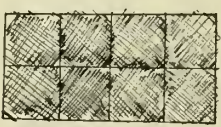

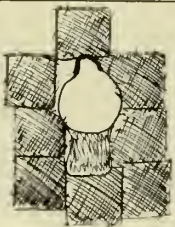
It has been shown that red cells (antigen) acted upon by their specific amboceptor (antibody) absorb complement to produce hemolysis. Similarly, bacteria (antigen) when acted upon by their bacterial amboceptor (antibody) also absorb complement to produce dissolution. Experimentally it has been shown that precipitable protein bodies (antigen) when acted upon by their specific antibody (precipitin) also absorb complement when a precipitate is formed. From this reaction we may write Equation B.

Precipitable Body plus Precipitin plus Complement equals Absorption of Complement. Making the equation more general we may write:

Antigen+Antibody+Complement=Absorption of Complement.

To Show Steps of Hemolysis, Bacteriolysis, and Fixation of Complement.

From Noguchi.

Antigen	+	Antibody	=	Reaction	+	Complement	=	Final Reaction.
Erythrocyte 	+	Hemolytic Antibody 	=	Sensitization: Union of RBCs & Antibody 	+	Complement 	=	Hemolysis, Visible  Attaching Complement to Sensitized RBC.
Bacteria 	+	Bacteriolytic Antibody 	=	Sensitization: Union of Bacteria & Antibody 	+	Complement 	=	Bacteriolysis Invisible. 
Protein 	+	Precipitin 	=	Precipitate 	+	Complement 	=	Fixation of Complement by Precipitate 

The absorption of complement may be shown by subsequently adding a suspension of red blood cells with its specific amboceptor (hemolytic system used as an indicator, producing a visible reaction). In order to produce hemolysis, all three factors of Equation B must be available. If hemolysis does not take place, we may conclude that something has interfered with the action of the complement previously added, since we know that the suspension of red blood cells with its specific amboceptor were added to the mixture. This absorption of complement actually does take place and was first shown by the investigations of Bordet and Gengou in 1901 and is now known as the BORDET-GENGOU PHENOMENON of complement fixation.

In this reaction therefore, we have an indirect means of detecting an unknown antibody by complement fixation with a known antigen, using the hemolytic system as an indicator. This indirect method of determination of antibody was first applied to the diagnosis of syphilis by Wassermann, Neisser and Bruck in May, 1906, and at the same time independently by Detre.

Syphilis being an infectious disease, produces a specific immunity and thereby specific antibodies are presumed to have been found. In the beginning it was supposed that the antigen (extracts of livers of syphilitic fetuses) was a specific body, and that the serum from patients suffering from syphilis would fix complement only in the presence of positive syphilitic extracts as antigen. It has been shown, however, that certain lecithin bodies in combination with cholestrin and fatty acid salts, known as lipoids, will substitute the specific antigen, to fix the complement with the syphilitic antibody. Generally now, non-specific extracts are used, such as extracts of normal livers or guinea-pig hearts.

The blood serum then, of a patient suffering from syphilis when mixed with antigen (lipoid bodies) in the presence of complement, that complement will be fixed and prevented from acting and taking part in a subsequent hemolytic reaction. This may also be represented by an Equation, by adding to Equation B the hemolytic system (which is Equation A minus Complement), we then have Positive Syphilitic Antibody+Antigen+Complement+Hemolytic System (blood suspension + amboceptor)=Negative (inhibition of) Hemolysis.


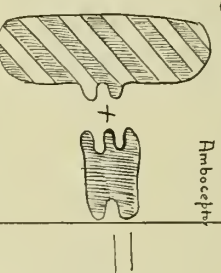
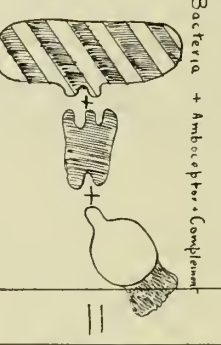
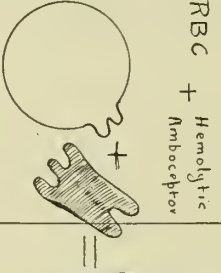
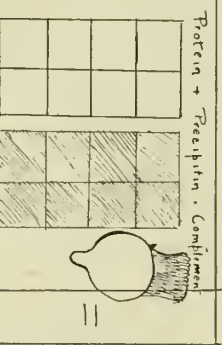
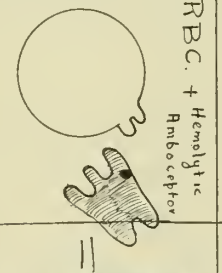
It can be seen from this equation that if we start with the given extracts and mix with them, in the presence of complement, a serum of unknown origin; if the complement is fixed so that hemolysis does not take place, it may be assumed with assurance that the unknown serum was derived from a case of syphilis (with certain reservations).

The relation of the complement, amboceptor, and suspension of red blood cells must be of quantitative balance with one another. The suspension of red blood cells must be of definite value, the amboceptor value carefully estimated and titrated against it, and both of these values compared with respect to the complement employed.

If in a hemolytic system, one amboceptor unit is used, at least one com-

From Noguchi.

To Show Complement Fixation The Bordet-Gengou Phenomenon

Antigen + Antibody + Complement + Incubation	Result	Another Set of Antigen plus Antibody	Result
RBC. + Amboceptor + Complement		Bacteria + Bacterial Amboceptor	
Bacteria + Amboceptor + Complement		RBC + Hemolytic Amboceptor	
Protein + Precipitin + Complement		RBC + Hemolytic Amboceptor	

plement must be needed for complete hemolysis. If less than one complement unit is added to the antigen and antibody in the syphilitic system equation, hemolysis would then be incomplete and one might conclude that some of the complement had been fixed.

Human serum sometimes contains natural amboceptor for foreign erythrocytes and it has been shown by Noguchi and others that it actually does contain some amboceptor for sheep cells such as is used in the original Wassermann system. At the Michael Reese Hospital, Chicago, Dr. J. W. Jobling uses antihem amboceptor. The hen besides being an animal more easily handled in the laboratory, it has never been found that normal human serum contains an amboceptor for hen corpuscles, and therefore it presents certain advantages over the original Wassermann system. This is the test I have been using in my work and shall call it the Jobling Modification.

TECHNIQUE OF THE WASSERMANN REACTION.

Of this I shall speak only very briefly; not going into considerable detail. For those who desire to master the method, they are referred to special works on the subject and are advised to spend considerable time in a Wassermann Laboratory to obtain the details.

PREPARATION OF AMBOCEPTOR. Use large, healthy rabbits. Several should be injected so that in case one or more die during the course of immunization, others may continue to be injected. A healthy chicken is bled by incising one of the veins under the wing and the blood collected in 2% sterile Sodium Citrate solution, to prevent coagulation. The corpuscles are then thoroughly washed at least four times by centrifugation in 0.95% NaCl solution and finally brought up to the original volume. 2, 4, 6 and 8 Cc. of these washed corpuscles (the original Wassermann method uses sheep corpuscles) are injected at five day intervals into the peritoneal cavity of the rabbits. It is of course, important that the entire process from the collection to the injection of blood must be done under absolutely aseptic conditions. Ten days after the last injection, the blood is collected aseptically by severing the jugular vein. The blood is allowed to coagulate and then kept on ice over night. The clear serum is then poured off, a little chloroform added to help preserve it and then kept in the ice chest.

TITRATION OF AMBOCEPTOR. In the Wassermann test, 1 Cc. of a 5% suspension of red corpuscles in a 0.95% NaCl solution is used as the standard dose in each test. In order to titrate and test the amboceptor serum we must use this quantity of cell suspension. As complement, fresh healthy guinea-pig serum is used in 1 to 10 dilution. Small amounts of blood may be aspirated directly from the heart under ether anesthesia, without injury to the animal. The blood is kept in the ice chest over night and the serum pipetted off and diluted 1 to 10 and 0.5 Cc., equivalent to 0.05 Cc. of the serum, is used for a dose. Into each of five tubes, marked 1 to 5 is placed 1 Cc. of the 5% blood suspension and the required amount of complement. Add to the respective tubes increasing amounts of the rabbit's serum (amboceptor) in quantities from 0.001 to 0.02 Cc. and incubate at 37 degrees C. Note

the results after $\frac{1}{2}$ hour, 1 hour, $1\frac{1}{2}$ hours and 2 hours. In the tube containing the greatest quantity of serum, hemolysis should be almost complete at the time of the first observation. The unit strength of the amboceptor may be considered as the least quantity capable of completely hemolysing 1 Cc. of the 5% blood suspension in two hours, and twice this amount is the quantity used as the dose in the final tests.

TABLE OF AMBOCEPTOR TITRATION.

TUBE	AMBOCEPTOR	COMPLEMENT	HEN CELLS	HEMOLYSIS IN
1	0.02 Co.	0.5 Co.	1 Co. 5 per cent	30 Minutes
2	0.01	0.5	1 Co. 5 per cent	1 Hour
3	0.005	0.5	1 Co. 5 per cent	1 1-2 Hours
4	0.002	0.5	1 Co. 5 per cent	2 Hours
5	0.001	0.5	1 Co. 5 per cent	Over 4 Hours

The dose of the amboceptor in this case is 0.002 Cc. Because of the liability to decomposition, the amboceptor should be titrated not less frequently than once a week.

PREPARATION OF ANTIGEN. An alcoholic extract of guinea-pig hearts is used for this. The minced tissue is extracted with 10 Cc. of absolute alcohol for every gram of minced tissue used and allowed to stand at 37 degrees C. for 24 hours shaking the mixture from time to time. This is filtered through paper and preserved in the ice chest. The efficiency of this extract must of course, be estimated and controlled.

TITRATION OF ANTIGEN. In order to ascertain whether the extract is suitable for antigen, it must be standardized and titrated against known positive and negative syphilitic serum for, (1) Hemolytic action, (2) Anticomplementary action, and (3) Antigenic properties.

(1). For Hemolytic action, the extract is diluted with 10 parts of normal salt solution and tested in the following way:

Antigen Emulsion 1 to 10	0.4 Cc.
Corpuscle Suspension 5%	1.0 Cc.
Normal Salt Solution	0.6 Cc.

Incubate at 37 degrees C. for 2 hours. There should be no hemolysis.

(2) For Anticomplementary Action:

Antigen Emulsion 1 to 10	0.2 Cc.
Complement 1 to 10	0.5 Cc.
Amboceptor	2 units.
Incubate at 37 degrees C. for 1 hour and add	
Corpuscle Suspension 5%	1.0 Cc.

Incubate for 2 hours. There should be no inhibition of hemolysis.

(3) For Antigenic Titration. The dose of antigen must be such that

one unit will completely inhibit hemolysis of 1 Cc. of 5% Corpusele Suspension with 0.2 Cc. of positive known syphilitic serum plus 2 units of Amboceptor, and 0.1 Cc. of Complement; and double this dose should not interfere with complete hemolysis, using a known normal serum.

TABLE OF ANTIGEN TITRATION.

Each tube contains: Positive Serum 0.2 Cc., Complement 1.0 Cc., Cell Suspension 5% 1.0 Cc., Amboceptor 2 units, and a varying amount of Antigen as in the table.

TUBE	ANTIGEN	RESULT
1	0.01 Co.	Slight Hemolysis 1 Hour
2	0.02 Co.	Slight Hemolysis 2 1-2 Hours
3	0.04 Co.	No Hemolysis 4 Hours
4	0.075 Co.	No Hemolysis 4 Hours
5	0.10 Co.	No Hemolysis Over Night

It will be seen from the above table that the least dose which inhibits hemolysis is 0.04 Cc. This is the dose then, to be used in the tests, provided that twice this dose does not interfere with complete hemolysis with a known normal serum. This is tested as follows:

Negative Serum	0.2 Cc.
Complement	0.1 Cc.
Cell Suspension 5%	1.0 Cc.
Amboceptor	2 units
Antigen	0.08 Cc.

Incubate for at least 2 hours at 37 degrees C.

There should be no inhibition of hemolysis.

METHOD OF PROCEDURE. Obtain some of the patient's blood by aspiration from a vein. A tube about 1 Cm. in diameter and 10 Cm. long is pulled out at both ends. To one end is attached, by means of a rubber connection, a strong hypodermic needle such as one may obtain on a large anti-toxin syringe. To the other end, attach a piece of rubber tubing about 20 Cm. long. This apparatus is sterilized by dry heat. Cleanse the bend of the arm in the usual manner and paint with a little Tincture Iodine. Constrict the arm above the elbow by means of a rubber tube to bring out the prominent veins. Quickly plunge the needle into one of the prominent veins and the blood will easily flow into the tube. If it does not flow well, slight negative pressure by aspirating the free end of the tube with the mouth will start the flow easily. When about 5 or 6 Cc. of blood has been obtained, quickly pull out the needle, detach the rubber connection, and allow the blood to flow into a dry sterile test tube. Slant the tube till the blood co-

agulates and then place it in the ice chest over night for the serum to separate and the next morning pipette off the serum into another test tube. This is now ready for inactivation by heating in a thermostat at a temperature of 56 degrees C. for 30 minutes. Other methods for obtaining about 3 Cc. of blood either from the ear or finger are also suitable.

The materials are now ready for the test and are to be mixed in the following manner:

PORTION A:

- (1) Inactive serum 0.2 Cc. in each of 3 numbered tubes.
- (2) Antigen Emul. 1 to 10 1 dose in tubes 1 and 3.
- (3) Complement 1 to 10 0.5 Cc. into tubes 1 and 2.
- (4) Normal NaCl 0.95% 0.5 Cc. into tube 3.

Shake all the tubes well and place them in the incubator at 37 degrees C. for an hour and 15 minutes. During this time, if the serum is syphilitic, the antibodies together with the antigen will fix the complement and render it inactive for subsequent hemolysis.

PORTION B. Hemolytic System:

Make up a sufficient quantity of 5% suspension of hen corpuscles in normal salt solution for the total amount to be used in all tubes for the day's tests and add to each Cc. of this suspension 2 amboceptor units and incubate for 1 hour. This will "sensitize" the corpuscles to the subsequent action of complement. Add 1 Cc. of sensitized corpuscles (Portion B) to each tube in each tube of Portion A. Incubate for 2 hours shaking the tubes from time to time. Then read the results and record as follows:

HEMOLYTIC SYSTEM

TUBE	SERUM	ANTIGEN	COMPLEMENT	AMBOCEPTOR	SUSPENSION	RESULTS
1	0.02 Co	1 Dose	0.5 Cc of 1-10	2 Units	1 Cc 5 per cent	Depends on Serum
2	0.02 Co	None	0.5 Cc of 1-10	2 Units	1 Cc 5 per cent	Complete Hemol.
3	0.02 Co	1 Dose	None	2 Units	1 Cc 5 per cent	No Hemolysis

Tube 1 contains all the elements for the complete reaction and if positive, there will be no hemolysis at the end of the incubating period. Tube 2 contains all but the antigen and since there is nothing to help the antibody to bind the complement, hemolysis should always take place whether or not the serum is positive. Tube 3 contains no complement, therefore there can be no hemolysis in this tube. There should always be known positive and normal sera as controls.

Noguchi's Modification tends to simplify this method. He uses as amboceptor, rabbit serum immunized against human red corpuscles and this is marketed in a dried state on filter paper. The human suspension of corpuscles from the patient is utilized, and acetone-insoluble of the extract is used as antigen. The complement, as in the Wassermann system, must be freshly obtained guinea-pig serum.

THE DIAGNOSTIC VALUE OF THE WASSERMANN REACTION.

The results that have been reported in the diagnosis of syphilitic conditions by the use of the Wassermann test according to the different investigators may be summed up about as follows: Primary lesions as a rule, do not give a positive reaction until the infection has lasted for some time, or until there is considerable glandular involvement. However reports show from 40% to 90% positive reactions. Secondary cases show a very high percentage of positive reactions, from 79.1% recorded by Hoenne to 100% by Boas and Ledermann, with an average of 93.7%. In tertiary syphilis more than 80% give a positive reaction. In latent cases without symptoms, 40% to 65% are positive, while hereditary cases give nearly 100% positive reactions. In parasyphilitic diseases the results are also quite high, in general paresis over 80% and about 60% for tabes. These results are for blood serum reactions. However, the examination of the cerebro-spinal fluid in these cases gives a still higher percentage of positive reactions.

Certain few other conditions give a positive Wassermann reaction. It is fairly constant in leprosy and trypanosomiasis as well as in some cases of scleroderma. A few cases of positive Wassermann have been reported in scarlet during the fever stage; but it is said to disappear later in the disease and is not at all constant at any time.

EFFECT OF TREATMENT ON THE REACTION. Lesser states that a positive Wassermann can be made negative in about 25% of the cases by giving 30 inunctions or 12 injections of mercury. Generally after a course of three months' mercurial injections the reaction will become negative: but may become negative early in the course of mercury treatment, so that a negative Wassermann in a patient who has recently had mercurials does not mean freedom from infection. Craig of the Army Medical School is of the opinion that the reduction or disappearance of a reaction is a valuable indicator of the effect of the treatment. Inefficient or inadequate treatment on the other hand, allows the persistence of the reaction.

"606" seems to have a more constant effect on the disappearance of the reaction. In Wechselmann's clinic, 153 out of 268 cases became negative within five weeks after the injection; while Herxheimer reports 75% of his cases becoming negative within 50 days after the injection. If the Wassermann is still positive 70 days after the administration of Salvarsan, it is probable that the reaction will remain positive.

In my own cases, the results of the Wassermann reaction corresponds very closely with the ultimate clinical findings and results. In a number of cases with indefinite symptoms in which a positive result was a surprise both to the attending physician as well as to the patient, a course of mercurials readily cleared up the symptoms. Also a number of cases with a history of previous infection apparently cured, clinically, gave a positive reaction. I have also found that recent mercurial treatment will frequently entirely mask the reaction, notwithstanding that the patient still has apparent lesions.

CONCLUSIONS.

1. Excluding leprosy, trypanosomiasis, and scleroderma we are justified to conclude clinically, that a positive reaction means syphilis.

2. A negative reaction on the other hand, does not absolutely exclude syphilis. In this way the limitations of the Wassermann may be compared to those of the Widal reaction in typhoid.

3. If after treatment, a period of 10 weeks elapse and a negative reaction is then obtained, although recurrences may take place they are much less likely than after a positive Wassermann.

4. In initial lesions a Wasserman is not necessary for diagnosis; because in these cases, the Spirochete is so much more easily and certainly found.

5. A negative Wassermann ten weeks after the injection of Salvarson is a valuable indication of the efficacy of the treatment.

6. The Wassermann is particularly applicable in cases of doubtful diagnosis.

7. More recent work indicates that the test affords a valuable indication for the control of treatment.

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CONCERNING THE DIAGNOSIS AND TREATMENT OF CONGENITAL SYPHILIS. . .

By **L. J. Moorman, M. D., Oklahoma City.**

Prominent among the things which we absolutely know about syphilis, stands the fact of its heredity. We know that syphilitic parents may transmit syphilis to their offspring. It may be truly said in connection with this subject that the sins of the parents are visited upon their children. In many cases we may go further, and say that these same children, these weazened, wrinkled, pitiful little creatures with faces prematurely old, are as remorseless as fate in divulging the sins of their parents. The latter may have succeeded ever so well in concealing their condition, but when the child comes the story may be made so plain that not only the physician, but even the laity may understand.

However, in many cases the diagnosis is difficult and the physician who is not constantly on his guard may follow the downward course of these unfortunate children and condole with bereaved parents who are spared the chagrin and self-condemnation which the truth might have caused. Yet the physician, whose first duty is to his patient, through want of a diagnosis, has allowed an innocent life—pitted against a loathsome disease—to be overwhelmed and crushed without even the coveted chance which intelligent treatment might have offered. With our present methods of diagnosis and treatment this sin of omission is all the more reprehensible.

The clinical symptoms of congenital syphilis may be present at birth, but in the great majority of cases the symptoms appear during the first few weeks of life. The following are the most common manifestations: Coryza (snuffles) and phemphigus; fissures and excoriations about the mouth and anus; mucous patches and onychia; enlarged liver and spleen; epiphyseal involvement; and, sometimes, pseudo paralysis. The skin may be colorless and the infant often presents a wilted senile appearance. The clinical picture is a familiar one and the diagnosis usually easy.

The purpose of this paper, however, is to consider particularly those cases in which the infection fails to manifest itself, appreciably, during infancy, or, in which treatment has been neglected or ineffective and the symptoms appear during childhood and resemble closely the tertiary stage of acquired syphilis. These cases are classed as late or tardy hereditary syphilis.

We may find as the only manifestation of congenital syphilis, insufficient body weight and growth, flabby muscles, lack of endurance and diminished vital resistance. Recent investigation has shown that interstitial myocarditis due to congenital syphilis is not uncommon, but almost invariably the diagnosis has been post-mortem. Hecktoen points out the fact that sudden death in seemingly normal children may be due to this cause.

Among the more demonstrable lesions of tardy syphilis, interstitial keratitis is of pathognomonic value. This is often associated with Hutchinson's teeth, and less frequently, central deafness. The most prominent bone lesion is the chronic periostitis, most frequently affecting the tibia, the bones of the forearm and the cranium. The characteristic saber deformity of the tibia belongs under this head. The lymph nodes are often enlarged, especially, the post-servical and epitrochlear. It must be remembered that syphilis predisposes to tuberculosis and that there may be a coincident tubercular infection of lymph nodes. There may be subcutaneous gummata which break down and give rise to characteristic ulcers. The liver and spleen are usually enlarged, sometimes almost filling the abdomen. While in the child the nervous system is not so frequently involved, there may be headache, various forms of paralysis, idiocy, etc.

DIAGNOSIS.

The family history is one of the most important factors in the diagnosis of congenital syphilis. The mother should be questioned closely as to miscarriages and still-births. The history and physical condition of other children in the family should be carefully investigated. It often happens that after having obtained a negative history, especially if the results of examination warrant suspicion, a secret interview with the father brings to light convincing evidence, and the diagnosis is made reasonably certain. It is also well to emphasize here the importance of a thorough systematic examination, especially in those cases of late or tardy syphilis where important signs or symptoms may be easily overlooked. Congenital syphilis often passes unrecognized because the physician thinks such a thing impossible in this or that particular family.

Malnutrition of syphilitic origin must be differentiated from late malnutrition due to other causes. Two such children in the same family, especially if the parents are robust, should cause suspicion, and the history should be carefully looked into.

The syphilitic bone lesions may be mistaken for sarcoma. I have known a surgeon to be called in consultation only to make a diagnosis of congenital syphilis substantiated by family history. The enlarged liver and spleen are often attributed to malaria, tuberculosis and other infections. The enlarged lymph nodes may be tubercular, or, as stated above, there may be joint tubercular and syphilitic infection and where doubt exists we should employ both the Wassermann and tuberculin tests. In many cases of congenital syphilis the therapeutic test may be of diagnostic value. In every case where there is serious doubt and it is possible to have it, the Wassermann test should be employed. It is also possible to demonstrate in the products of the lesions the *spirochaeta pallida*. Unfortunately, the two latter tests require special skill and laboratory facilities.

TREATMENT.

My experience has been principally with mercury and Iodide. The

bichlorid of Mercury being used in almost every instance. Beginning with 1-200 grain two or three times a day, the dose is increased until satisfactory results are obtained, or until green watery stools result. The average syphilitic infant will take from 1-20 to 1-30 grain in twenty-four hours. If after several days no improvement is noted, injections may be added to internal treatment. Some cases resist every remedial effort and die in a few weeks.

After all symptoms have disappeared the patient should be examined every three or four months, and a course of bichlorid prescribed for one month out of every three or four. The treatment of tardy hereditary syphilis is practically as outlined above with the addition of iodids sufficient to produce the characteristic erysypela. I have given to a child six years of age 1-30 grain bichlorid and 12 drops of saturated solution of potassium iodid, three times a day. The iodid of potash should not be continued too long without interruption as it may interfere with digestion. These cases should have the same continued periodical inspection and treatment as recommended above.

SALVARSAN.

As yet it is impossible to say to what extent the treatment as outlined above may be modified by the use of Salvarsan. I have in mind one case of pronounced congenital syphilis in a boy six years of age which responded beautifully to Mercury and Iodid. Not only did the lesions seem to disappear, with the exception of slight enlargement of lymph nodes, but the child was transformed in general appearance. After ten months active treatment he exhibited a positive Wassermann and received an injection of Salvarsan. The parents have been advised to have a second injection if the Wassermann again proves positive.

In reviewing briefly the use of Salvarsan in the treatment of congenital syphilis, the following statement from Weichselmann's report, "Personal Experiences in Fourteen Hundred Cases," is of particular interest. It is to be remembered that Weichselmann, working upon the foundation laid by Alt and Schreiber, was the first to be entrusted with the use of Salvarsan on a large scale. In the opening paragraph of his report he says, "As I was unable to estimate in advance the dangers which might be incurred by such treatment, I proposed that experiments be made at first in children suffering with hereditary syphilis and affected with pemphigus. According to all experience, the internal organs in these children are replete with spirochetes to such an extent that death is inevitable, with or without mercurial treatment. I began these experiments early in March. I soon ascertained that a very miserable child, rapidly nearing death with Little's disease, tolerated 0.03 gm. very well, administered intra-muscularly. When it died fourteen days later, the organs did not show any changes, macroscopic or microscopic, that might have been attributed to the arsenic. In all the children most gravely affected with syphilitic pemphigus, the symptoms receded rapidly. In a few cases, however, there was a rise in temperature, severe anemia, and, in two cases, a peculiar opisthotonus appeared; and while some of the chil-

dren recovered, three cases resulted fatally. But here, too, the post-mortem examination showed no signs of arsenic poisoning. Nevertheless, it seems to be possible that through the rapid dissolution of the enormous quantities of spirochetes following the administration of Salvarsan, such a large amount of endotoxins is liberated that severe and fatal injury may be caused to the feeble organism of the infant. This seems to be indicated by the fact that we no longer had any deaths, later on, when we injected only 0.015 to 0.02 gm., repeating the dose after eight days; the results as to the disappearance of the clinical symptoms was very satisfactory."

In reviewing the literature on this subject it seems that most of the unfavorable results have followed large doses or in cases with marked contraindications.

It is important to note that tuberculosis is not a contraindication, since Mercury is known to be deleterious in cases of severe tuberculosis coincident with Syphilis. The chief contraindications are weak heart and hemophilia or any condition predisposing to hemorrhage.

One of the most interesting observations in connection with Salvarsan, is the fact that syphilitic infants upon the milk of syphilitic mothers recently injected with the remedy, show a rapid disappearance of all symptoms of syphilis. According to Ehrlich's opinion a large quantity of endotoxins is liberated by a sudden destruction of the spirochetes. This brings about the formation of antitoxins which are supposed to enter the milk. The fact that only the slightest trace of arsenic was found in the milk seemed to favor this theory. On the other hand, Jesionek (Muench. Med. Wochensehr., May 1911) claims that the milk invariably shows the presence of arsenic, and thinks the good results may be due to the arsenic instead of the antitoxin. He reports cases in which the symptoms and lesions showed exacerbation after the mothers were injected with Salvarsan, and draws the inference that the endotoxins from the maternal spirochaeta had passed through the milk to the child, and that this method of treatment is not without danger. These observations led Jesionek to try upon a syphilitic child the milk of a goat that had been recently injected with Salvarsan 0.6 gm. Within two weeks all symptoms had disappeared. In view of this report and the probability of the nursing mother, so treated, conveying toxic products to the infant, and the fact that the milk cow need have only a correspondingly larger dose, it seems possible that the faithful cow may add much to her well deserved reputation by furnishing the cure for congenital syphilis.

INJURIES OF THE EYE BALL AND ITS APPENDAGES.

By Edward F. Davis, M. D., Oklahoma City.

Injuries of the eye may be classified into four groups; those by contusion, penetration, the introduction and retention of foreign bodies and those caused by heat, chemicals and light.

In contused injuries, the eyelids suffer first giving the condition known as "black eye" which is an infiltration of blood and serum into the loose cellular tissue. Aside from the disfigurement, this is of slight consequence and is best treated by cold applications when seen early. After the discoloration is complete, heat will promote absorption though one to two weeks are usually required for the complete disappearance.

Echymosis may be due to more distant injuries such as fracture of the base of the skull in which case it appears some time after the injury. Fractures in the frontal region or of the lamina papyracea are usually accompanied by emphysema due to extension into the frontal sinus or the ethmoid cells. The lids are swollen, tense, not specially painful and emphysematous crackling may be elicited by palpation. These cases are best treated by compression and warning the patient to refrain from blowing the nose and forcing still more air into the tissues. Abscess formation is not rare in fractures of the orbit. Fractures may be so extensive that the eye ball is dislocated from the socket and cases are reported in which the eye has been found in the Antrum of Highmore or in the nose. There may be a sinking of the eye after severe contusion without fracture, due perhaps to atrophy of the retrobulbar cellular tissue. The opposite condition (exophthalmos) may appear when there is a fissure into the cavernous sinus and the internal carotid has been torn. Such a condition may arise during operations in the region of the eye, such as the tear sac operation. There is some protrusion of the eye and possibly complete blindness from pressure, though this is only transitory and the vision returns in a few hours.

There may be a paralysis of some of the external ocular muscles, particularly the external recti, in fractures of the base. This is caused by pressure on the abducens nerve and may be immediate or delayed, primary or secondary according to whether the nerve has been injured by laceration or merely subjected to pressure by extravasation. The duration of this paralysis depends on the amount of destruction of the nerve.

The optic nerve may be cut off or so severely injured by fractures extending into the optic canal that simple atrophy with complete and permanent blindness follows.

Contusions of the ball itself may involve any of its structures; conjunctiva, cornea, iris, lens, sclera, retina and choroid.

An extravasation of blood beneath the conjunctiva may result from such an injury or it may be spontaneous. As in infiltration into the lids, absorption is slow though in very urgent cases it may be hastened by the injection of sterile air in a hypodermic syringe.

When the cornea is involved, there is usually some abrasion with pain, lachrymation, photophobia and circumcorneal injection. A boric acid collyrium with a light pressure bandage will usually suffice in the treatment of this condition.

In contusions of the sclera, there is usually some conjunctival injection along with the deeper congestion of the sclera proper. An injury severe enough to cause contusion of the sclera may be the cause of intraocular changes also such as rupture of the choroid although this condition may result from relatively slight injuries. There is hemorrhage into the vitreous with reduced vision or possibly there may be hemorrhage under the choroid with detachment. Blood in the vitreous may be absorbed and leave a fair degree of vision though there is permanent loss in proportion to the choroidal destruction.

Contusions of the iris may cause a partial dilation due to the laceration of some of the sphincter fibres. There may be a tear through the iris from the pupillary margin to the ciliary body in which case there is paralysis of accommodation. The true character of the injury may be concealed by hemorrhage into the anterior chamber.

Iridodialysis, a detachment of the outer border of the iris from the ciliary body, is of rather frequent occurrence. The pupil is irregularly contracted and if the bleeding is not excessive, the tear may be seen as a black crescent at the outer margin of the iris and an ophthalmoscopic view of the fundus may be had through the new pupil. Usually, there is considerable hemorrhage which has a tendency to recurrence. The condition is frequently complicated by iritis. The treatment is a tropine, rest and cold applications. While the rupture in the iris is not likely to close again, it does not necessarily interfere with subsequent vision unless there is an irregular corneal astigmatism in which case there may be mon-ocular diplopia.

An injury severe enough to cause detachment of the iris is likely to produce some changes in the lens, first of which is dislocation. This is usually backward and on ophthalmoscopic examination, the lens may be seen in the new position. In those cases in which the dislocation is slight, the vision may not be greatly disturbed. When the edge of the lens is in the pupillary area, there may be a non-ocular diplopia or if it is dislocated down into the vitreous, there will be single vision but it will be very poor owing to the high degree of hyperopia. In backward dislocation of the lens when it sinks into the vitreous, it may remain quiet and cause no special trouble. This was the original cataract operation. There is little to be done in the backward subluxation of the lens as it is practically impossible to extract it without serious damage and possibly loss of the eye.

The lens may be dislocated forward into the anterior chamber which then becomes very deep and there is great increase of tension. The removal of such a lens is very difficult. A very wide corneal incision must be made and as there is usually a rupture of the hyaloid membrane, there is loss of vitreous and the lens may fall back into the vitreous chamber. An aid in avoiding this accident is the fixation of the lens with a needle before the corneal section is made and the use of the loup. The slightest pressure will cause vitreous prolapse and in addition to this, there may be expulsive hemorrhage, retinal detachment and as a rule, the final operation of enucleation of the eye must be made. This is the rational procedure in the first place unless the other eye is already blind for the lens must be removed or there will be glaucoma, iritis, etc., and in the removal, the eye is usually lost. While it is a bold thing to enucleate an eye in which there is still some vision, there is no question of its being the proper treatment.

Traumatic cataract may develop as a result of a contusion. After the formation of the cataract, extraction may be carried out as in a normal case when the lens is sufficiently solid to do a simple extraction. In young people, the condition is much the same as that after the needling operation and is to be treated the same.

Ruptures of the eye ball are confined to the sclera on account of the elasticity of the cornea. In rupture of the sclera, the tearing begins from within and is usually in a radial direction until it nears the cornea when it becomes circular. In these ruptures, the instrument doing the damage must be blunt or there would be perforation. The force is usually applied from the temporal side owing to the protection of the bridge of the nose and the impact against the trochlea causes a rupture to the nasal side of the cornea. There is usually a good deal of blood in the vitreous and frequently, the iris and ciliary body are injured. The lens may be dislocated and forced from the eye entirely or be found under the conjunctiva. In some few cases the blood may be absorbed and the wound heal with some vision but as a rule, the prognosis is dubious. When there is no infection and resulting panophthalmitis it is advisable to wait a reasonable length of time before enucleating.

Penetrating wounds of the lids may be either punctured, incised or lacerated. Those caused by puncture are of special importance on account of the fact that the ball frequently suffers with the lids and the possibility that in this way, a foreign body may be deposited within the eye. Punctured wounds into the orbit are liable to infection and in the treatment, the first requisite, is to secure sufficient drainage. Lacerations of the lids are apt to be accompanied by extensive destruction of neighboring structures. The tear ducts may be ruptured, the commissures torn or the whole lid may be stripped off. In lacerations and incisions of the lids, it is very necessary to secure perfect coaptation of the edges to prevent deformity and the long train of complications that may follow.

Penetrations of the cornea cover a wide range of destruction in varying degrees from the slight damage done by sterile foreign bodies to cuts involving most of the other structures of the eye. Frequently there are small abrais-

ions from scratching with the finger nail or a cut from a hair. For a short time, the symptoms are out of all proportion to the amount of damage done with the greatest pain, lachrymation and photophobia.

Small incisions of the cornea usually heal rapidly. If the wound is large enough to gape open, a very fine suture may be put in. The most dreaded of all eye injuries on account of later complications are those incisions in which the iris is caught in the wound. When there is any protrusion of the iris, it should be excised and the edges replaced as in a careful iridectomy. Such injuries as this, especially when the cut involves the sclera as well as the cornea are the ones that cause sympathetic ophthalmia. For this reason, all penetrating wounds in the ciliary region are very grave and if after a few days, it is conclusively demonstrated that there is no vision, enucleation followed by the use of an artificial eye will give a better cosmetic effect as well as reduce the possibility of sympathetic inflammation of the other eye. Those cases in which the ciliary region has been injured but the vision not entirely destroyed, which later on show an otherwise unexplained circum-corneal injection of the sound eye with reduced vision, are the ones of gravest importance. When a sympathetic ophthalmia is well under way, enucleation of the offending eye, unless it is blind, is a questionable procedure as the former sound eye may prove to be the poorer of the two after the process has become quiet.

The lens may be injured by a penetrating wound which may cause a traumatic cataract or a dislocation. Incisions or lacerations of the sclera without involvement of the iris and ciliary body result in a loss of vitreous in relation to the size of the wound. If this is small, there may be rapid healing with little destruction of vision but if it has been extensive or there has been great loss of vitreous, there is great danger of infection or retinal detachment. As in incised wounds of the cornea, sutures are to be used when the wound is large enough to warrant them.

Of wounds with retention of foreign bodies, those of the cornea are the most common. Such injuries are caused by dust, sand, cinders, particles of iron or other metal, stone, powder grains, etc. A foreign body in the cornea may be so small as to be found only with difficulty. There is pain, lachrymation and intense sensitiveness to light which, with the reduced vision, and circum-corneal injection may give the clinical picture of a beginning iritis. There may be merely a loss of the superficial epithelium which readily reforms or there may be infection and corneal ulcer.

Foreign bodies should be removed under aseptic precautions at once. When they have penetrated beneath the epithelium, the eye should be washed with a boric acid solution and it is well to instill a drop of atropine and apply a bandage. Should an ulcer result, heat should be used and if there is a tendency toward extension, the edges of the ulcer should be touched with the actual cautery.

The cornea may be perforated and foreign bodies may lodge any place within the eye; in the anterior chamber, iris, lens, vitreous or in the case of bullets, may pass on through the sclera, out of the eye proper and into the tis-

sues of the orbit. A foreign body in the anterior chamber or in the iris usually can be seen and should be extracted through the wound of entrance if possible. Should this wound be in the pupillary area and already closed, it is better to make a new incision at the cornea border. In case of iron or steel, the removal may be simple by the aid of the giant magnet. Other metals should be grasped with forceps or should that be impractical, an iridectomy including the body may be made. Foreign bodies in the lens cause traumatic cataract which should be extracted as soon as completely formed. The capsule of the lens is very sensitive to irritation and there may be a circumscribed opacity resulting from contact with a foreign body as sometimes happens when one is pushed through the cornea in the attempt to remove it.

Foreign bodies in the vitreous give a grave prognosis. They may sink to the bottom of the chamber, become encapsulated and give no trouble but there is always the possibility of serious complications such as iritis and panophthalmitis. When the body can be located, an attempt should be made to remove it through a scleral incision.

The lids naturally suffer more from injuries by heat than the eye ball does. These injuries are caused by hot water, grease, flame, the glowing ends of cigars, etc. The first step in the treatment is to prevent infection as far as possible. Antiseptic moist dressings should be used and changed often enough to prevent the destruction of the newly formed granulation tissue when removed.

These burns are apt to involve the cornea and sclera as well as the lids and may be of any degree from just enough to cause a separation of the superficial epithelium which readily re-forms, to deep destruction resulting in a thick opaque scar. When the inner surface of the lids is involved as well as the cornea and sclera, there is great difficulty in preventing adhesions between the lids and ball. This trouble however is more common in burns caused by chemical agents.

Corrosion by concentrated alkalis or acids result in great destruction of tissue. The commonest of these are lime and concentrated lye and their action is very rapid. The eye should be washed at once with plain water and an attempt made at neutralization. In the case of lime, a sugar solution will form a soluble salt. Weak acids may be used in lye burns and as this is a household accident, vinegar will probably be the most accessible acid. Alkalis should be used in acid burns but usually in all these caustic injuries, great damage is done before any remedies can be applied. Where the resulting scar covers only a part of the cornea, it may be that fairly useful vision may be obtained by making an artificial pupil by iridectomy. When there is a tendency for the formation of symblepharon or adhesions between the lids and ball, these adhesions should be broken up frequently and if permanent bands form, limiting the movement of the eye, they should be dissected out and the denuded area covered by drawing over it the adjoining conjunctiva.

Very bright lights may give rise to ocular changes. These conditions are seen after eclipses of the sun when the precaution of using smoked glasses

has not been taken. Exposure to very bright electric light and to sun light on snow will produce the same result.

There may be merely a conjunctivitis with sensitiveness to light and profuse lachrymation or deeper changes affecting the cornea and retina. Treatment of these cases consists of exclusion of light and putting the eye at rest by the use of atropine. They usually regain the vision completely.

Certain changes may follow lightning strokes and the exposure to strong electric currents. They may consist of burns around and in the eye or by electrolytic action, cataract may develop rapidly.

The eye is of too great importance to be neglected as is often done and all injuries should be considered serious at first and should be treated carefully. If it is a poor endorsement of the physician to have a case of blenorrhoea neonatorum develop in an infant that he has delivered, it reflects equal discredit to him to prescribe only a boric acid solution and say that he "guesses" that it will be all right in a few days.

EDITORIAL.

THAT STATE HOSPITAL.

At the last meeting of the State Medical Association, a resolution was introduced and passed, memorializing the Legislature to establish a State Hospital. Since that time I have received a number of letters from physicians inquiring into the why and wherefore of this movement. Therefore a little discussion of this subject, considering its importance, appeals to me as being timely.

We assume that the State's obligation to its indigent sick is not a debatable question. Therefore, as far as the taxpayers of the State are concerned, there are just two questions of paramount interest. The first and most important, at least to the mind of the unselfish and charitable citizen, is efficiency of service. How can we give the best service to those unfortunates who must be considered as wards of the State? Let us compare the State Hospital proposition with the present method.

The care of the sick of the State is now in the hands of the County Physician for each county of the State. In the main these are good and efficient men, conscientiously discharging their duties and doing the best they can for the sick of the county in which they officiate. No man can be an expert, however, in all lines of medicine. This general practitioner is obliged to give such service as he can to general diseases, operative surgery, eye, ear, nose and throat, skin and venereal, mental and nervous, and so forth.

Now, then, the advantage of the State Hospital immediately appears when we consider that were every county, through its county health officer, allowed to send cases to the State Hospital, these cases would receive expert service instead of being all in the hands of the general practitioner. Cases requiring surgical interference would have the care of an expert surgeon; cases in ear, eye, nose and throat would be cared for by a specialist in this line; skin and venereal likewise, and so on through the list.

Now I believe that no fair-minded physician will differ with me when I say that, so far as service is concerned, the centralization in a great State Hospital is the ideal.

The next question for the taxpayer is that of economy. We are willing, they may say, to give the best service if we can do so—but what will the expense be? Here again the advantage of the State Hospital is distinctly apparent. Suppose, for example, that we assume that there are two continuous cases, on an average, under the care of a county physician in each county of the State. This means that we are paying for the services of seventy-five physicians in taking care of this largely scattered sick element. Instead of the County Commissioners paying the expense in each

county for the separate care of these wards, if these one-hundred-fifty patients were sent to the State Hospital and taken care of, free of charge, the burden of the taxpayers of all the counties of the State would be reduced in the neighborhood of seventy-five per cent. of the present expense of such care. I think no one will contest this position, that it is very much cheaper. While the figures given above are not based upon actual statistics, yet it must be apparent that a great saving would be made to the taxpayers by treating one-hundred-fifty individuals in one institution rather than, as by the present method, when scattered over the seventy-five counties of the State. This burden, of course, would be divided strictly according to population, and therefore, equitably according to the distribution of wealth, the richer and more populous counties bearing the burden of the expense, and the sparsely settled and poorer counties in proportion.

But, you say, possibly, would not the expense of these specialists be as great, or greater, than the expense incurred in employing the general practitioner in the counties? Under proper arrangement the service rendered by the best men the State can procure can be had without one dollar's expense to the taxpayer.

This arrangement is not new or untried. It is, indeed, the ideal of those men who have given most attention to medical charities and medical education, that is, the awarding of the entire control of the State Hospital to the medical department of the State University. Therefore, the State Hospital idea and the State Medical School must be considered as one institution, and I think it is incontrovertible that such an amalgamation serves best the interest of every one concerned. The only possible opposition that I can see emanating from any source is from the county health officer whose earnings may be curtailed by sending patients to the State Hospital for treatment. But these are few in number, for most physicians are conscientious, and practically every county health officer has patients whom he feels incompetent to treat successfully and would be more than willing to refer such cases to the hospital center for proper treatment.

The hospital and medical school combination is perfectly illustrated in the organization and management of John Hopkins. It has also made the medical department of the State University of Michigan a school of first importance, as well as blessing the citizenship of Michigan in caring for the sick, Minnesota likewise, two years ago, followed the example of Michigan, and at a conference recently held in Chicago of the various organizations interested in this work, it was the unanimous opinion that this was the ideal—the operation as one institution of the State College of Medicine and the State Hospital.

It may not be a matter of common knowledge to physicians what an enviable position the State of Oklahoma at present occupies in the field of medical education. In the last report of the Council of Medical Education of the American Medical Association, the School of Medicine of the State University of Oklahoma was ranked in the "Acceptable" and Class A divi-

sion. Now, just what this means is apparent when we remember that there are only four other schools in the South which have an equal rank with our own: The Medical Department of the State University of Texas, at Galveston; the Medical Department of Tulane University, at New Orleans; the Medical Department of the State University of Alabama, at Mobile; the Medical Department of Vanderbilt University, at Nashville. There are, indeed, two states, Mississippi and North Carolina, which give acceptably two years of the course, but these four are the only ones recognized in the same class with our school of medicine. We feel that every loyal Oklahoman ought to be proud of this distinction. And there is no reason why, by harmonious action and the proper education of the taxpaying public, Oklahoma should not be kept on the map as the location of a great center of medical education.

Now, the reason I have mentioned the fact of the standing of the Medical School in connection with the State Hospital, is just this: With the few students—fifteen last year—who graduated from the State University, we had sufficient clinical material to keep us within the bounds of the demand made by the Council of Medical Education. But if this year we should have twice the number of graduates—and our geographical location entitles us to four times that number—we would utterly fail to be able to furnish clinical material for the larger class, and would, therefore, be forced to take second rating at the hands of the investigating committee of the Council of Medical Education. It is, therefore, imperative, if we are to take care of our Medical School and furnish the citizenship of the State of Oklahoma the highest grade of physicians, that we have this State Hospital to furnish clinical material.

There may be those among physicians who even now will say, "It is not essential that we have Medical Schools to which we may send our young men; we may send them outside of the State. There are better Medical Schools in the United States than we can hope to build in Oklahoma." This is indeed true, and will continue to be true so long as the two-hundred-fifty or more medical students which Oklahoma produces each year, and the \$100,000 which they spend, and will spend, toward the support of foreign institutions is continued. The same reason for maintaining and building up the Medical Department of the State University applies with neither greater nor less force to any other educational institution in the State. We could likewise send our students outside of the State to mechanical and agricultural colleges, to normal schools, and colleges of the liberal arts; so, likewise, we could buy all our manufactured products, and even farm products, outside of the State, but in the general scheme of our State civic development, Medical Schools must be considered as a factor along with the rest.

Every interest of humanity demands that we raise the standard of medical education; that we turn out upon the suffering public only the highest grade scientifically practitioners, and the old adage right here holds true. "If you want anything well done, do it yourself." If the State of Oklahoma wants to take its place in the sisterhood of States as one of complete

development of all of its resources, one standing for the highest ideals in education, the highest efficiency in commerce, the most productive in agriculture, then, let us establish a great State Hospital, put it in charge of the Medical Department of the State University; man it and equip it with the best talent available, and demand that the State Board of Medical Examiners raise their requirements to a level with our own in examination and reciprocity.

To recapitulate the advantages of the State Hospital, then:

First: The indigent sick of the State will be better cared for, thereby reducing the drain upon our vital resources from general morbidity.

Second: From the standpoint of economy in dollars and cents, the central State Hospital is distinctly advantageous.

Third: To maintain and develop our Department of Medicine in the State University to its highest possibilities, it is absolutely essential.

A. K. West, M. D., Professor of Medicine, Medical Dept., State University.

FACTORS CONTRIBUTING TO SURGICAL MORTALITY.

When one considers with what handicaps the surgeons of preanesthetic and preaseptic days were contending the degree of success they attained is truly remarkable. It will profit us in these days of refined surgical technique to study closely into the reasons why this is true, for there can be no doubt that these same factors are operative to a degree today.

In that day, with the screaming patient strapped to the table, it was necessary for the surgeon to exercise the utmost skill, dexterity, and, above all, **speed**. It followed as a matter of course that that surgeon possessing these qualifications cultivated to the highest degree of perfection was the most sought after. Every cross-roads practitioner did not assume the insignia of a surgeon. Now, this speedy, dexterous operating insured two important factors in lessening operative mortality, viz.: **time** and **manipulation**. Even without a working knowledge of the laws of inflammation and suppuration, the most skillful of our predecessors often succeeded in securing primary union of cut surfaces, a result which by the way is not always secured even today.

So this brings us to the question of time as a factor in surgical mortality. With the introduction of anesthesia and asepsis the pendulum of surgical opinion swung far out to the side of deliberateness in operative maneuvers. The surgeon, in his endeavor for ultra nicety, ignored the fact that all that Nature was asking of him was a little **help**, and assumed that he must do it all, so he invariably did too much and was too long in doing it.

Time manifests its influence in three directions: 1. Shock from prolonged exposure. 2. Increased chances of infection. 3. Increased amount of anesthetic consumed.

It is certainly clear that shock and infection-liability is directly pro-

portionate to the length of time of exposure, other things being equal. This applies, of course, with equal force to the amount of anesthetic consumed.

Operative manipulation, especially within the abdominal cavity, is another important factor. In our work we have always been rewarded for care exercised in this matter by smooth and uncomplicated convalescence. Especially do we wish to emphasize traction on the mesentery through which visceral nerve and blood supply is obtained and in which lie the conduits for the conveyance of the products of visceral activity.

Meteorismus is certainly in large degree dependent directly upon the just mentioned factor. This is not only a matter of direct observation with us but it is also the experience of other operators. It can readily be seen that mesenteric traction influences both the nervous and circulatory supply to the intestines, hence paresis and meteorismus. The syndrome, known as surgical shock, is also conditioned more or less upon this factor.

Vomiting is, and has been, a factor of no little importance and has often turned the scale which was trembling against the patient. Aside from ether idiosyncrasy, this again is directly proportionate to the length of the operation, the amount of ether absorbed, and visceral manipulation and exposure. Of course personal equation enters into the matter, but even so, these factors still have their bearing, that is to say, the ether-sensitive patient will react more to the anesthetic in direct ratio to the amount absorbed.

The kidneys fall in the same category so far as the ether or other anesthetic is concerned, but in addition we must here consider **chilling** the body surface at a time when the skin surface is leaky and perspiration is pouring from every pore, as an important element. The mere mention of this should be sufficient, yet it is no uncommon occurrence to see patients wheeled through draughty halls with scant protection. This applies to the healthy as well as the diseased kidneys.

The lungs, even though diseased, do not necessarily contra-indicate operative procedure, though a diseased lung should call for the exercise of vigilant watchfulness that all the above mentioned factors should be minimized to the utmost. Sometimes by the relief of a pathology which is dragging the patient down we are able to so reduce the load he is carrying that a very gratifying improvement is at once evident.

Valvular heart lesions, if compensated, need not be feared, provided the operator is both speedy and dexterous. Uncompensated lesions are a serious matter in the surgical sense.

In a general way it may be said that all unnecessary preparation preceding the operation should be avoided as giving rise to **mental apprehension**. In our work this now consists, in the average case, in the mere giving of an ounce of castor oil the evening before, and the shaving of the field of operation, and a preliminary pre-anesthetic hypodermic of morph. gr. 1-4 and atrop. gr. 1-150.

Simplicity in methods of preparation and operative technique—a sim-

plicity which is comprehensive and which will brook no waste of motions in the actual operation—is the keynote here, as elsewhere, to the highest measure of success.

There are many more factors which, more or less, influence surgical mortality, but which cannot be discussed in the limited space of an editorial.

In summing up, then, it may be emphasized that, other things being equal, the time element lies at the bottom of a chain of events which in critical cases turns the balance between life and death, against the patient.

A. L. BLESCH, M. D.

THE MORAL SIDE OF ABORTION.

The complete mastery of the technic and confidence in aseptic measures led to a lowering of the sense of moral responsibility in the production of abortion. Without a due consideration of the moral side of this question, there is apparently a tendency on the part of some of the skilled members of our profession to perform this operation.

The professional abortionist is excluded from this consideration and all others who do not recognize the criminality of the operation, except as an extreme measure of relief for very serious physical conditions: We believe before the operation is done an exhaustive investigation should be made not only to the physical condition of the woman, but as to the truth of her statement concerning her previous history.

For example, a woman in her third month of pregnancy applied to the family physician to empty her uterus. She was a woman that, at a glance, would be judged not in the best of health, but without any serious constitutional trouble. Although it was true that she was having trouble with her stomach, her heart, kidneys and lungs were sound, and examination with pelvimeter showed pelvis of normal dimensions, and this is the first child. Her history proved that some time before her marriage she had been treated by a gynecologist for a slight retroversion which had been cured. Upon request her former physician was called in consultation and both agreed that it would be improper to terminate pregnancy. Her husband informed his family physician that he would have an abortion performed, for he was sure that his wife was not physically strong enough to withstand the strain that she was then going through, and it was performed by a reputable physician of high standing. Doubtless, this physician felt justified in his course from the statement made to him, presumably the same made to the other physician.

Do you think this physician did his entire duty, and could this act be commended by his professional brethren. We do not think this act meets approval and that it shows a very low state of moral stamina.

The line can not be too sharply drawn between conscienceless crim-

inal abortion and those who refuse to use their skill in inducing abortion except for extreme cause and this extreme cause is rare.

Moral conduct in most of the social activities is low enough now days. Let us hope that reputable physicians will exert all of their efforts to raise this moral standard and will ever be ready to decry this demoralization. "All sects are different, because they come from men; Morality is everywhere the same, because it came from God."

W. E. Dicken, M. D., Oklahoma City.

AS TO DR. EMMETT DILL.

Dr. Emmett Dill, formerly of Mississippi, who has recently located in Muskogee, successfully passed the State Board of Medical Examiners at the July meeting held in Guthrie.

As his name was not on the list furnished by the Secretary, Dr. Duke, we take this method of correcting the matter in justice to the doctor and express the regrets of the Board that his name was inadvertently omitted.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Preparations are now practically completed for caring for the sixth annual meeting of the Medical Association of the Southwest to be held at Oklahoma City, Oklahoma, October 10 to 12.

As this was the birthplace of this Association, the profession of that bustling city are determined to make this meeting in the form of a reunion and will spare neither time nor expense to make this meeting one long to be remembered.

The guests of honor are: Dr. A. R. Edwards of Chicago, who will deliver the oration on "Internal Medicine;" an officer to be detailed from the Public Health and Marine Hospital Service, (Surgeon General Wyman has not designated the officer); Dr. A. H. Andrews, Chicago, Ill., oculist and aurist, and the Presidents of the State Associations of Kansas, Missouri, Arkansas, Texas and Oklahoma.

The following is the preliminary draft of the program:

Section on General Medicine.

- "An Interesting Case of Cerebro-Spinal Meningitis".....
.....Dr. Wilmer L. Allison, Fort Worth, Texas
- "Vaso-Motor Symptoms of Infantile Spinal Paralysis".....
.....Dr. W. S. Lindsay, Topeka, Kan.
- "Remarks on Ulcers of Stomach and Duodenum, with Citation of a Case
of One of the Duodenum".....Dr. C. B. Hardin, Kansas City, Mo.
- "The Institutional Treatment of Chronic Diseases".....
.....Dr. Robt. E. Thacker, Lexington, Okla.
- "High Frequency Current in Chronic Affections".....
.....Dr. W. T. Wootton, Hot Springs, Ark.
- "Digitalis and Strychnia".....Dr. C. W. Fisk, Kingfisher, Okla.
- "Physiologic Therapeutics".....Dr. John W. Bolton, Iola, Kan.
- "The Diagnosis of Pellagra".....Dr. Theo. C. Merrill, Colorado, Tex.
- "Bromo-Delirium; Somatic and Physic Indices".....
.....Dr. S. Grover Burnett, Kansas City, Mo.
- "Recent Advances in the Diagnosis and Treatment of Syphilis".....
.....Dr. Wm. Frick, Kansas City, Mo.
- "The Treatment of Pellagra".....Dr. E. H. Martin, Hot Springs, Ark.
- "What Shall We Do to Be Saved".....Dr. A. B. Leeds, Chickasha, Okla.
- "Malarial Hematuria on Lower Canadian, or Tuberculosis Among the
Choctaws".....Dr. S. E. Mitchell, Stigler, Okla.

Section on Eye and Ear.

DR. H. COULTER TODD, Chairman.

DR. HOWARD HILL, Secretary.

- "The Conjunctival Flap, the Indications and Methods".....
Dr. R. H. T. Mann, Texarkana, Texas
- "The Treatment of Sarcoma".....Dr. H. Moulton, Fort Smith, Ark.
- "Accessory Sinuses".....Dr. H. E. Thomason, Kansas City, Mo.
- "Surgical Methods in Treatment of Retinal Detachment".....
Dr. G. W. Maser, Parsons, Kan.
- "Glaucoma".....Dr. Edw. H. Cary, Dallas, Texas
- "Ocular Complications in Hysteria".....
Dr. L. Hayes Buxton, Oklahoma City, Okla.
- "Dacryocystitis and the Tear Sac Operation".....
Dr. Edw. F. Davis, Oklahoma City, Okla.
- Paper.....Dr. A. H. Andrews, Chicago, Ill.
- Paper.....Dr. A. W. McAlester, Kansas City, Mo.
- Paper.....Dr. J. H. Barnes, Enid, Okla.
- Paper.....Dr. Sawtelle
- Paper.....Dr. R. S. Magee
- Paper.....Dr. D. L. Shumate

Section on Surgery.

DR. J. F. KUHN, Chairman.

DR. HOWARD HILL, Secretary.

- "Resection of the Caecum".....Dr. B. F. Fortner, Springfield, Mo.
- "Osteomyelitis; and Report of a Case"....Dr. J. E. Oldham, Wichita, Kan.
- "Neuralgia Deep Alcohol Injections"....Dr. B. L. Hale, Cherryvale, Kan.
- "Chronic Intestinal Stasis".....Dr. J. F. Binnie, Kansas City, Mo.
- "Ischaemia in the Primary or Acute Stage".....
Dr. Chas. H. Cargile, Bentonville, Ark.
- "A Comparative Study of the Practice of Surgery in Mexico and the
 United States".....Dr. L. H. Huffman, Hobart, Okla.
- "Pelvic Displacements; Causes and Rational Treatment".....
Dr. Frances A. Harper, Pittsburg, Kan.
- "The Principles of Success in Hernia Operations".....
Dr. St. Elmo Sanders, Kansas City, Mo.
- "Sequelae of Polio-Myelitis".....Dr. J. D. Griffith, Kansas City, Mo.
- "Total of Subtotal Hysterectomy"....Dr. H. C. Crowell, Kansas City, Mo.
- "Abdominal Injury with Pitch Fork Handle, by the Perineal Route"
Dr. W. H. Addington, Altoona, Kan.
- "Rectal Prolapse with Report of Cases".....
Dr. E. H. Thrailkill, Kansas City, Mo.

- "Abdominal Drainage".....Dr. Chas. Blickensderfer, Shawnee, Okla.
- "Significance of Pain in the Upper Abdomen".....
.....Dr. Arthur W. McArthur, Kansas, City, Mo.
- "Advances in the Preparation and After Treatment of Pelvic Operative
Cases".....Dr. H. S. Crossen, St. Louis, Mo.
- "Septic Infection".....Dr. W. J. Jolly, Oklahoma City, Okla.
- "Careful Diagnosis a Professional Duty"...Dr. E. D. Ebright, Wichita, Kan.
- "Three Cases of Tumor of the Messentery".....
.....Dr. H. E. Pearse, Kansas City, Mo.
- "Postoperative Ileus—Report of a Case Relieved by Intestinal Punc-
ture".....Dr. LeRoy Long, McAlester, Okla.

FACULTY MEDICAL DEPARTMENT STATE UNIVERSITY,**In Norman.**

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Professor of Chemistry—Edwin De Barr, Ph. D.

Professor of Physiology and Materia Medicine—Albert Clifford Hirshfield, M. D.

Professor of Zoology and Embryology—Henry Higgins Lane, M. A.

Professor of Pathology and Neurology—Louis Alvin Turley, A. M.

Professor of Pharmacy and Materia Medica—

Associate Professor of Chemistry—Guy Yandale Williams, M. A.

Lecturer on Hygiene and Sanitation—Gayfree Ellison, B. S., M. D.

In Oklahoma City.

Professor of Diseases of Eye, Ear, Nose and Throat—Edmund Shepherd Ferguson, M. D.

Professor of Obstetrics—John A. Hatchet, M. D. (of El Reno).

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Professor of Surgery—William James Jolly, M. D.

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Professor of Clinical Medicine—Robert Findlater Williams, M. A., M. D.

Lecturer on Clinical Surgery—Abraham Lincoln Blesh, M. D.

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Lecturer on Clinical Surgery—J. B. Rolater, M. D.

Lecturer on Clinical Surgery—Millington Smith, M. D.

Lecturer on Genits Urinary Surgery, Venereal and Skin Diseases—Curtin Richard Day, Ph. G., M. D.

Lecturer on Orthopedic Surgery—Robert L. Hull, M. D.

Lecturer on Operative Surgery and Director of our Patent Obstretical Department—Leigh F. Watson, M. D.

Lecturer on Gynecology—Samuel Robert Cunningham, M. D.

Lecturer on Gynecology—John Smith Hartford, M. D.

Lecturer on Clinical Eye, Ear, Nose and Throat—Lauren Haynes Buxton, M. D., L. L. D.

Lecturer on Clinical Eye, Ear, Nose and Throat—Harry Coulter Todd, M. D.

Lecturer on Obstetrics—Robert Elmore Looney, M. D.

Lecturer on Clinical Microscopy and Director of the Clinical Laboratories—Clarence Edward Lee, M. D.

Lecturer on Clinical Medicine—George Althouse Lamotte, B. L., M. D.

Lecturer on Clinical Medicine—Leo Armistead Riely, A. M., M. D.

Lecturer on Medicine—Joseph Fife Messenbaugh, M. D.

Lecturer on Physical Diagnosis—Lewis Jefferson Moorman, B. S., M. D.

Lecturer on Nervous and Mental Diseases—Antonio De Bord Young, M. D.

Lecturer on Diseases of Children—W. M. Taylor, M. D.

Lecturer on Therapeutics—Wm. Richard Bevan, M. D.

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Instructor in Surgery—Ralph Smith, M. D. (Guthrie).

Instructor in Gynecology—E. E. Rice (Shawnee).

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Instructor in Medicine—F. B. Borgatz.

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Next meeting, Muskogee, Okla., Commercial Club, beginning October 10th. Address all communications to the Secretary.

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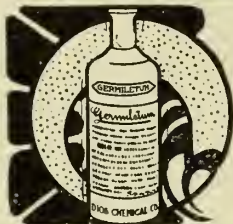
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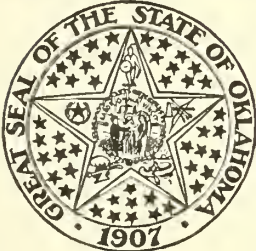
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SURGERY OF URACHUS.

R. V. Smith, Surgeon-in-Chief, M. E. Hospital, Guthrie, Oklahoma.

Early in the Embryonal period the allantois is given off from the layers of the blastodermic membrane which are internal to the plueroperitoneal space, and is formed by that part of the hypoblast and splanchnopleur which is intended for the primitive intestinal tract. In mammalia the lateral infoldings of the embryo together with turning forward of the anal membrane contracts the allantois at the umbilicus. Therefore two portions are formed, an intra-embryonal and an extra-embryonal, the latter part extending from the umbilicus to the chorion soon shrivelling, and after birth cast off with rest of umbilical cord.

A spur of tissue exists between the allantois and yolk sac or umbilical vesicle. This spur continues to grow backward through the primitive intestine until it divides the gut into an upper part or intestine and lower part, continuous with the allantois forming the urinary bladder and urachus.

The urinary bladder becomes distinct about the second month of intra-uterine life. The portion of the allantois between the umbilicus and bladder continues patent but gradually contracts, until, at the end of the fourth to

sixth month, it normally becomes a firm fibrous cord and by some anatomists is described as one of the ligaments of the bladder.

In early intra-uterine life the urinary bladder and urachus is entirely surrounded by peritoneum except the anterior part where a meson is formed. This structure gradually disappears and the urachus ordinarily becomes extra-peritoneal. In cases, however, the urachus with a complete peritoneal covering may be formed among coils of intestine, and, according to Binnie, may be the site of some of the obscure abdominal cysts the diagnosis of which can be accurately made only at time of operating by finding the pedicle of same either at umbilicus or fundus of bladder. Again this type of urachus may become the cause of intestinal obstruction as in the case reported by Fanoni in "The Post Graduate, New York, July 1907." In this case the urachus was about the size of the small finger and stretched from the fundus of the bladder to a point 1 inch above and to right of umbilicus. A portion of the bowel was caught between this cord and abdominal wall.

Of the various conditions arising from anomalies of the urachus those of greatest interest to the surgeon will be found in cysts of urachus and fistulae or more properly speaking patency of urachus.

Cysts of urachus may be either intra or extra peritoneal and may range in size from one the size of a pea found incidentally when making examinations for other conditions, to a cyst containing eight to ten liters of fluid. While the contents of these cysts are usually fluid, yet smaller ones have been found filled with sebaceous material.

In the treatment of these cysts only about 10 per cent are reported as being removed in time of operating. The surgeon usually being content to drain the cyst pack and allow to heal by granulation. The latter plan being as a rule very satisfactory.

Patent urachus may be of four varieties: First, complete or one in which urine drains from the umbilicus. This tube may be only a small fistulous tract or one as much as an inch in diameter. Second, external fistula usually termed fistula of umbilicus. Third, internal or one communicating with bladder cavity or, fourth, the urachus may be closed at both ends with patency of the intervening portions. This latter is the class that no doubt gives rise to cysts of urachus and might more properly be considered as elongated cysts.

Accepting the statement of Binnie that fifty per cent of all autopsies reveals an anomalous condition of urachus, ranging from a mere diverticulum at fundus of bladder to a patency extending to the umbilicus or nearly so, it is very evident that many of the internal of fistulae variety never give rise to any symptoms. Some are the foci of infection for recurring attacks of cystitis. Others have been found to contain encysted urinary calculi and again through burrowing of pus in abscess formation

or long continued bladder retention pus and urine have made their escape at umbilicus and the fistula then becomes complete.

The external fistula may become infected, giving rise to foul smelling pus, and if drainage is not sufficiently provided for may be the cause of very large abscess of abdominal wall.

Treatment of these fistulae lies in complete removal of them to a point within one-half inch of fundus of bladder and closure of stump by whatever method the operator may elect to use.

Before doing so the operator should be certain that there is no obstruction of the normal outflow of the urine. It is well established that no urinary fistula will heal in presence of marked stricture of urethra. The converse of this is equally true that given an unobstructed urethra of normal caliber it is practically impossible to keep a fistula from closing.

The finding of three cases of anomaly of urachus within a comparatively short space of time during the authors operative work prompted him to submit this paper, which is offered as a brief review of the subject, he laying no claim to originality.

The first case was that of a girl of five years. In attempting a rapid incision to drain a diffuse, suppurative peritonitis originating in the appendix, I made an opening nearly an inch long in a patent urachus. The loss of time incident to closure may have contributed to the unfavorable result in this case. Murphy says, "Get in quick," "get out quicker." I got in "quick" but failed to get out at all with any degree of credit to myself.

The second case was that of Miss E. B., age 16, in making a two-inch median incision when operating for acute appendicitis, I found a fibrous band three-fourth inches across at lower angle of wound outside of peritoneum. A closer investigation revealed a patent urachus extending one inch from pubic arch. Had I made my incision one-fourth inch lower, I again would have been subjected to some embarrassment. This case gave no history of trouble that could be traced to this condition.

Case 3, T. J., male, age 34. This patient gave a history of trouble at umbilicus since childhood. Though he could never recall having had any leakage of urine at the naval. His present trouble dated back about three months previous to the time of coming to hospital. Examination revealed a small strawberry like tumor protruding from naval and a hard, indurated mass extending for about two inches on either side, including greater part of both recti muscles. This mass could be traced well down towards pubic bone. Quantities of foul smelling pus exuded from umbilicus. The operation consisted of entire removal of the mass down to and including large part of both recti and a section of peritoneum. Well down in the tumor about two and one-half inches from naval was found a mass of sebaceous

material about equal in size to a pigeons egg. The pedicle of this tumor proved to be a broad fibrous urachus about one inch across and three-eighth inch in thickness. The gross appearance of mass was that of malignancy, yet the pathological report showed the strawberry excrescence to be papillomatous and the other main portions of tumor fibrous tissue.

THEORIES OF IMMUNITY AND VACCINE THERAPY.

By Dr. W. R. Bevan, M.D., Oklahoma City. Okla.

The main reason for the bringing of this subject to your attention is the fact that it is a comparatively new subject and presents a promise of being a great aid to us in the treatment of a large number of diseases which heretofore have defied our efforts to curb.

The fact has been recognized for ages that one attack of many infectious diseases, such as smallpox, scarlet fever, pertussis, and so on, protects the individual against subsequent attacks, or renders these subsequent attacks mild and harmless. In other words, one attack renders an individual completely or partially immune to the disease from which he has suffered.

I shall attempt, in as concise a way as is consistent with clearness, to explain the processes through which the system obtains such immunity, and to show how we can, by taking advantage of certain known facts, use this ability of our systems to become immune, in the treatment of widespread disease for which we have at the present time no specific drug or antidote.

It has been positively shown that in the course of certain infectious fevers, and those set up by certain organic substances, that there are developed within the system certain antibodies, by means of which certain bodies become neutralized, so that the system becomes protected, and with this the febrile disturbance comes to an end.

We can readily see that the continued existence of the human family, if we are all of a common origin, has meant continued adaptation; for environments suitable for individuals of one species may be fatal for those of another, and that during evolution the ancestors of the different existing species, subjected to different environments, have undergone adaptation in different directions—have become modified and immune to influences which, without such modifications, would have brought about cessation of activity and death.

We recognize, first, an absolute immunity; second, a relative immunity; that is, that living matter has gained the capacity of withstanding the action of certain agencies up to a certain limit without being destroyed. We must recognize, further, that this relative immunity is quantitative, that there are limits beyond which the action of the agency becomes detrimental.

This immunity acquired against a certain infectious disease, especially in those running an acute course, presents sometime a transitory, sometimes

a permanent peculiarity of the individual concerned, which, in pregnant women, may be transferred to the foetus in utero. Further, it has also been shown that a single or repeated inoculation of attenuated pathogenic bacteria which, on account of their slight virulence, produce a disease that, in contrast to the natural infection with bacteria of full virulence, is relatively insignificant and often localized to a certain area, can also confer immunity against the corresponding disease; as for example, an infection with cowpox, or vaccination, confers immunity against smallpox. And as the result of the process of immunization properly carried out, smallpox is today non-existent in the German Empire, save for cases introduced over the borders; and affects other countries in inverse proportion to the rigor of their vaccination laws and the stringency with which these are enforced.

Bacteria produce their harmful effects upon the human organism in one of two ways, or by both: either by a product of secretion or excretion, and exotoxin or extra-cellular toxin which is taken up and diffuses itself through the body, or, by an endotoxin which is bound up within the bacteria and is only liberated by their death; or, by both an extra-cellular and in intra-cellular toxin. As an example of those pathogenic bacteria which produce their effects by an extra-cellular toxin, we may mention Diphtheria bacilli, and Tetanus bacilli. These germs produce a toxin which, if injected into an animal without any of the germs being present, will produce all the symptoms of its respective disease. Other germs, such as the Streptococcus, Typhoid bacillus, and Gonococcus, must be present in the body in order to produce their results. Whether this endotoxin is liberated only upon the death of the germs is still a question in dispute. As the symptoms of diphtheria and tetanus are caused by the diffusible products of bacterial life and activity, immunity against these diseases is simply the development of the ability of the body to neutralize these products.

Let us take for example, the production of diphtheria antitoxin. A culture of diphtheria bacilli are grown in a suitable bouillon, then filtered and the exotoxin which is a product of the growth of the diphtheria bacilli is separated from the germs. This filtrate is then injected, first, in very small doses, and gradually in larger doses, into a horse and the injections are continued until the horse can stand many times the ordinary lethal dose for a horse not accustomed to the toxin. The horse is then bled and the serum is used as the antitoxin. This serum is found to contain a new body as the result of the injections of toxin, and this substance is known as the antibody, and possesses the power of combining with the toxin of diphtheria bacillus wherever found, whether in the test tube or in the blood of a patient suffering with diphtheria, and neutralizing it, and thereby preventing it entering into combination with the cells of the body and producing its harmful effects. By this process the horse becomes actively immune and the patient passively immune. This kind of immunity, which is simply the production of an anti-poison to combine with and neutralize a poison, can be produced against diphtheria, tetanus, bacillus pyocyaneus,

snake venom, and several vegetable poisons. However, the process of producing immunity against cells and bacteria is a more complex process. Let us first study the phenomenon of cytotoxicity and in so doing we shall proceed from the known to the unknown. We know that the serum of guinea pigs has normally very little effect upon rabbits' blood and blood corpuscles; but if a guinea pig has injected into it rabbits' blood corpuscles, its serum becomes extremely active rabbits' blood corpuscles, for if now a little of this guinea pig's serum is added to a suspension of rabbits' blood corpuscles there results extensive dissolution of the corpuscles, with escape of the hemoglobin and "hemolysis." Therefore there must have been some new factor produced in the guinea pig's serum. And this new body is termed the amboceptor. But this is not the only factor, for if we heat this active guinea pig serum to 55 degrees to 60 degrees C, the hemolytic action is wholly arrested, but if the serum of another normal guinea pig be added to this mixture of heated guinea-pig serum with the rabbits' blood corpuscles, hemolysis immediately begins. Therefore, it was a normal product of guinea-pig serum that was destroyed by the heat and not the amboceptor. Consequently we must assume that this body is a normal product of the guinea-pig serum and its presence is absolutely necessary to complete the phenomenon of hemolysis or cytotoxicity, and is therefore called the complement.

The existence and combined action of these two bodies—amboceptor and complement—can similarly be demonstrated in every case of cytotoxicity and bacteriolysis as the result of injecting small doses of the living organisms, or larger doses of the dead organisms, and is produced in identically the same way. By injecting into the patient a bacteria or suspension of dead germs, there is caused to be produced the amboceptor. Now, if there is present in the patient's blood-plasma a complement which will unite with this amboceptor there will result a bacteriolysis or dissolution of the living germ corresponding to the kind of bacterin or vaccine used.

There is yet another class of substance present in the blood serum which are factors in the bacteriologic process. These substances are known as Opsonins. The word "opsonin" literally means, "I prepare for food." When different bloods are examined in regard to the ability of the blood and leukocytes to destroy bacteria, the main variable factor is found to be the serum and not the leukocytes, and it is also found to be the amount of opsonin in the blood which causes the leukocytes of one patient's blood to ingest a large number of bacteria while the leukocytes of another's blood may not be able to ingest more than a third as many bacteria. These opsonins are very variable in different individuals, and in the same individual at different times. By means of a very few practical tests it can readily be demonstrated that the opsonins combine with the bacteria and renders them a much more susceptible prey for the leukocytes. To state in a few words the effect of opsonine upon bacteriolysis, we may say that the op-

sonine, by combining with the cell substance of the bacteria, reduce their ability to fight the leukocytes, and do not directly increase the ability of the leukocytes to destroy the bacteria. The amount of opsonine in the blood is increased by inoculation of, small amounts at first, and, then, gradually increasing amounts, of dead bacteria or vaccine.

There is yet another phenomenon we must understand in order to be able to explain what is apparently a contradiction to the theory of immunity, and that is, anaphylaxis. Since the employment of diphtheria antitoxin, occasional cases have been reported of sudden death following upon the inoculation of the serum. In 1906 Rosenau and Anderson were able to collect nineteen cases out of the literature. The symptoms may come on within five minutes of the inoculation, with collapse, unconsciousness and convulsions, with paralysis of respiration and death. These symptoms are not produced by any toxin or antitoxin in the anti-diphtheria serum, for plain horse serum will produce the same effect. Experiments for the cause of this phenomenon have led to some very remarkable results. If a moderately large amount of a foreign serum be injected into an animal, either subcutaneously or into the peritoneal cavity, no immediate effects are produced, and the animal, in a few days, becomes immunized to that serum. But if instead of a large amount of serum a very small amount be injected at first, and then in from ten to twelve days a large amount is injected, the animal may die in a very few minutes. To make myself clearly understood, let us consider a concrete example:

Eggwhite is a very innocuous proteid. If we take as little as 1-100,000 of a cubic centimeter of egg albumen, and inject it into a guinea pig, and then in twelve days inject 5 C. C. of egg white into the guinea pig, the animal is apt to die—it may be in a few minutes or at most in a few hours. Instead of being rendered immune, the very opposite result has been brought about; the animal has been sensitized or rendered much more susceptible to the foreign proteid. This process of sensitization has been called anaphylaxis.

Various theories have been adduced to explain this remarkable phenomenon. The most plausible theory is that of Vaughn. He has shown that all albumens and bacterial proteins can be split into two portions, one poisonous, and the other non-poisonous. Even a molecule of such an innocuous albumen as egg-white can be split into an extremely poisonous moiety and a non-poisonous moiety. Animals may be sensitized by a small amount of unaltered egg-white, or with the non-poisonous part, but not with the poisonous part. What is more, the non-poisonous part does not sensitize to itself, but to the unbroken egg-white.

These facts can only be satisfactorily explained on the supposition that when a small amount of protein is introduced into the organism, the cells have an affinity for the non-poisonous part and not for the poisonous part. The same results ensue whether the egg-white, or only its non-poisonous

element, is introduced. The cells become habituated to attract to themselves the non-poisonous part and to form and discharge a series of receptors which combine with the non-poisonous part. When, therefore, after this habituation or immunity has become established (in 10 to 12 days) and the unbroken egg-white is introduced, the cells and these receptors actively attract the non-poisonous element of the albumen, thereby liberating the poisonous part, which now free in the body fluids, enters the blood, circulates to the brain, and there sets up those disturbances, more particularly in the respiratory center, which lead to death. The second dose of egg-white must contain enough egg-white to furnish a fatal dose of the poisonous part when split up in the body.

But why do we obtain these anaphylactic phenomenon only when the first dose is small, and why, under ordinary conditions, when the first dose is large, do we gain immunity to the whole protein molecule? Here the principle of dissociation of ions may be invoked. Just as when a very small amount of Na, Cl, is dissolved in a large quantity of water it undergoes a dissociation into its Na, and Cl, ions, but when the amount is large the dissociation is largely wanting. So with the introduction of a minute amount of a protein into the system, that protein undergoes dissociation into its poisonous and non-poisonous moieties. The amount of toxin liberated in the small injection at first is too small to have any effect, but when larger amount is injected the cells attracting and combining with the non-poisonous moiety liberate a large amount of the toxic part, and this entering the circulation and brain produces its effects. It seems that when a large amount of protein is given at first, this ionization and dissociation into its poisonous and non-poisonous parts does not occur, and the body cells attract and act upon the protein molecule as a whole, accustoming themselves to deal with the whole molecule.

Bound thus into cells the toxiferous moiety has no deleterious effect, for, as stated above, the poisonous moiety acts specifically, not upon the body cells in general, but upon certain cells of the nervous system. This entrance into the general circulation may happen in transfusion experiments, or in preliminary doses of protein in large amounts, and in this way we explain the lethal effects of serum sickness.

Successful administration of the vaccine presupposes that the physician understands thoroughly the phenomena of immunity and has a good working knowledge of bacteriology, and unless the physician has this knowledge it is practically impossible for him to use the treatment scientifically and obtain the greatest degree of success. I shall not attempt to outline a definite procedure for the various diseases treated with the vaccine, but shall confine myself to the treatment of one disease, namely, gonorrhoea in the male. If you can master this disease the others are comparatively easy.

Let us, for example, consider a patient who applies to the physician during the first few days after the appearance of the discharge for the first

time. The patient should be instructed to abstain entirely from all alcoholic beverages and from any article of diet or drink that is at all irritating to the palate, such as pepper sauce, mustard, carbonated water. He should drink freely of plenty of good water. He must avoid entirely sexual intercourse and even sexual excitement. Then give him a good emulsion which is antiseptic and soothing. This I believe is of considerable benefit. Then I give him a five per cent. (5%) solution of Argyrol, with instructions to inject the penis every three hours, using special precaution to not force the injection past the cut-off muscle, and to hold it in the penis for five full minutes by the watch. Impress upon him that he must not guess at the length of time. I believe that a weak germicidal solution in contact with a gonococcus for a long period of time is more effective than a much stronger solution for a short period of time, and certainly will not do as much damage to the mucous membrane of the urethra. Let him continue this treatment until the discharge has diminished to the morning drop, if possible, or, in other words, until improvement ceases, whether the penis is still discharging freely, or only a little in the morning. The patient is now ready for the vaccine.

Begin with an injection of 50,000,000 dead gonococci per C. C. If you are to get effect from the vaccine the patient must develop during the first twenty-four hours a local reaction at the site of injection, characterized by pain and redness, and a constitutional effect, characterized by malaise with a possible headache, backache, frequent pulse, and a slight increase in temperature. The discharge is increased during the first 24 hours and then there is a marked lessening of the discharge and improvement for two days as a rule, but sometimes for three days. On the third day the patient should receive another injection of 50,000,000 and continue with the same sized injection every third day until the patient refuses to improve. Then increase the amount to 100,000,000 per C. C., and so on, as the case may demand. The largest dose I have given to a patient at one time is 1,200,000,000 killed gonococci. The above is of course a typical case and as various complications arise the treatment must vary.

There are, however, simple, uncomplicated cases of gonorrhea that do not react in the slightest to the vaccine. The reason for this is still a matter of conjecture, but I am inclined to believe that there is some factor lacking in that patient's blood and it seems to me that most probably it is the complement. These cases are, of course, very obstinate and I cannot conscientiously promise very much as regards a permanent cure. However, it seems to me that we shall soon be able to make those patients react to the bacterin.

I have treated cases of gonorrheal arthritis and cases of gonorrheal ophthalmia with the bacterin and had very gratifying results. Wright has demonstrated that opsonins are formed locally, or by the cells directly stimulated at the point of injection. From here they diffuse into the blood and lymph. Upon this assumption Wright states that the point of injection

best suited to treating an infected area is near the focus of infection and at such a location that the flow of blood and lymph is toward the point of infection. I have found in gonorrheal infections of the urethra that the effect is better if the injection is given in the upper and inner aspect of the thigh.

It is necessary not only to produce highly opsonic blood and lymph, but it is of the utmost importance to insure the conveyance of the opsonins to the infected area, and the failure to appreciate this fact is often the reason for failure to obtain results. In gonorrheal infections this is particularly applicable as gonorrheal infection is always attended with an inflammatory exudate which effectually prevents free circulation of the blood and lymph.

We cannot overestimate the importance of a careful examination in every instance and the institution of appropriate treatment along with the vaccine, which should be employed as an adjunct and not to supplant other forms of medication. And while vaccine therapy is attractive theoretically, too much must not be expected of it in the way of marvelous cures. It should be used along with other beneficial methods of treatment.

Oklahoma City, May, 1911.

A PECULIAR CASE OF ECLAMPSIA AND TREATMENT.

By Dr. L. T. Strother, Nowata, Oklahoma.

On Saturday evening about 5 o'clock, September 24, 1910, was called to attend Mrs. M., in her second confinement. On arrival found labor well advanced, head presenting, and engaged in inferior strait, with strong expelling pains. The patient was complaining of severe headache, for which I immediately gave chloral hydrate 10 grains, and potassa bromide 20 grains. Hardly had time to do this when was needed at the bed-side to support the perinaeum, and receive the child. The placenta was delivered in a few moments without difficulty, and entire. Shortly after which she expressed herself as being completely relieved of the headache. This was about 7 o'clock. After mother and babe were properly cared for, we departed for home.

About 4:30 o'clock the next morning, Sunday, September 25, was again called to this place. On arriving there learned that about 1:30 or 2 o'clock a. m., she awoke from sleep, complaining again of severe pain in the head. The chloral and bromide mixture prepared in the early part of the evening, having been thrown out, there was nothing at hand for relief. At 3 o'clock she went into a convulsion. The husband aroused the neighbors, one of which being dispatched for me. In the meantime she had had the second and third convulsions before my arrival. About one hour had elapsed since the last spasm and my arrival. I found her rational, but somewhat dull. She answered all questions intelligently, complaining of some headache, but not near so severe as when she awoke during the night. Tem. 99, pulse 86.

Immediately gave another dose of chloral hydrate and potassa-bromide. Also calomel 5 grains, and podophyllin one-sixth grain. I remained with her fully an hour, talking to her and watching her closely. As could see no indications of further trouble, was leaving directions for the administration of more calomel and podophyllin, preparatory to returning home; when was urged to stay for breakfast then ready. As that would prolong my observation of the patient, consented to do so. She inquired about something to eat, and we gave directions for her breakfast, and cautioned her that she must eat in a recumbent position. We were about half through eating, when an exclamation and call from the sick room to hurry to her bedside. We found her in a terribly long and hard convulsion. We gave chloroform by inhalation, and, as soon as could prepare it, 12 drops Norwood's tinct. of veratrum-viride, subcutaneously, and requested Dr. B. W. Freer be called.

After waiting thirty, or thirty-five minutes, and there appearing no effects from the dose of veratrum, gave hypodermically the one-tenth grain of apomorphine. There was no response to this drug either. We then had

recourse to saline-enemata, with good results as to emptying the colon. In about an hour after Dr. Freer arrived. Her condition then was complete unconsciousness, which had continued since the last convulsion. Deep sluggish breathing, system relaxed, tem. 98, pulse 80. The doctor and I agreed on an effort of thorough elimination. He recommending one-tenth grain of claterium, every two hours for several doses; while I advised oleum tigllii. As having long since learned, to place great reliance in that agent, in arousing a benumbed and depressed brain. In about an hour after, while waiting for the medicines the doctor was to send, I was perparing to give another dose of veratrum viride, when she vomited. Throwing up what little breakfast she had eaten and large quantities of green bile and mucous. This was repeated three times. I then noticed that her pulse had dropped to 42, temp. 98. As soon as the medicines arrived, I rubbed up 5 or 6 grains of calomel, and one-tenth grain of eleterium, with 5 drops of croton oil.

This we had much difficulty in administering, as could not pry the teeth apart, to place the medicine on the tongue, and had to be content with depositing it well back on the inside of the cheeks, and with our finger rubbing it in between the teeth as best we could. Tem. 98, pulse was then 48. In two hours gave another dose of eleterium, pulse and tem. the same, and found that there had been a free passage of urine. This we felt was an encouraging indication, and again in two hours a third dose of eleterium with podophyllin, tem. normal, pulse 48. She had been able in the last two or three hours to occasionally swallow a tablespoonful or so of water; when was thinking of giving the fourth dese of eleterium, and three drops of the cil of tigllii, her bowels passed a large thiek black mass, and again aout dark there was another free bowel movement of the same character; tem. normal, pulse towards evening ranging from 52 to 56. Thus closed Sunday the 25th.

During the night there were three large dark green actions from the bowels. At 4 o'clock next morning, Monday, the 26th, she began to show signs of returning consciousness, and by 7 a. m. she seemed to be perfectly at herself. She was ordered a dose of castor oil, and during the day had three or four actions from same. On the next morning, Tnesday, the 27th, we made our last visit, and from that time on she made steady progress to complete reeovery; as if nothing abnormal had occurred. This case is reported from the fact that the convulsions did not come on for something over seven hours after delivery had taken place, and the tardy and delayed action of the remedies employed for relief. I have never known but one case before (and that not in my practice), where the eclampsia was set up so long after the birth of the child. As to the drugs employed there was no response to the veratrum-viride for at least two hours after it had been introduced into the circulation. I was condemning myself for not giving a larger dose of this potent remedy, and was preparing to give another hypodermic of 8 or 10 drops; when the system responded to its action. When finally its action was established, pulse rate down to 42, remaining at 48 for

over four hours, and below 60 the rest of the day, was very well satisfied with its action. In a practice of over 44 years I had never known Norwood's tincture of veratrum viride to fail before; had never known its physiological action delayed when given hypodermically, more than 20 or 25 minutes. And in all my practice have never given **but once** a larger dose than 12 drops hypodermically. In fact, have oftener administered 10 drops than over that number. Have always received the action wanted, and never before had an occasion to wish that I had administered a larger dose. We were highly gratified at the favorable and full response of the patient's system in this case, to our efforts at elimination; for we all understand now that this fearful malady is caused by toxæmia; and that the only hope for our patients in such conditions is to relieve the toxic condition of the blood, through some of the excretory avenues of the system. Fifty years ago the treatment of puerperal eclampsia was generally by venesection and that was the teaching; and years ago in such cases as this, I have tied up the arm and used the lancet; but the fatality in puerperal convulsions in those days was much greater than today; which speaks eloquently of the advancement made in the treatment and management of this disease. In my own practice I have been so fortunate as to never have had a fatal case of puerperal convulsions. Some twenty-five years ago suppose I saw the first article of some physician giving his experience in a case of puerperal eclampsia, with the tincture of veratrum viride which with the knowledge I already had of the remedy, appealed to me as the one means to combat this condition, depressing as it does the circulation; slowing and softening the pulse; relaxing the system and any spasm of the blood vessels that may exist; acting at the same time as a sedative to the spinal cord, thus quieting and controlling nervous excitement. It prepares in the best possible manner the system to respond to the action of catharsis, or other means of elimination. It so impressed me that I began its use in similar conditions, and have never employed any other treatment since; but should not hesitate to bleed also in connection with the Veratrum treatment, if I should meet a case where there was marked cyanosis, and a tense pulse which did not yield to the other line of treatment. The one case in which I made use of more than 12 drops of Norwood's tincture of veratrum viride was in the following instance:

On December 17, 1911, 5 o'clock a. m., received a telephone call to see "Mrs. P." When arrived, found the house full of excited women; learned that Mrs. P. was the mother of three children; was pregnant, and that pregnancy had advanced to about the eighth month or term. She had retired the evening of the 16th as well as common. In the morning about four o'clock her husband awoke and found his wife lying on the floor in an unconscious condition. He lifted her back on the bed, and was trying to arouse her when she went off into a convulsion. The husband supposed she was dying, and summoned the neighbors. Nearly an hour had now elapsed since this convulsion when I arrived. She was perfectly rational, but could not remember anything since going to bed the evening before. There had been very little swelling of the feet and ankles, and no puffing of the face noticeable; tem.

normal, pulse 88. While I was getting all the information I could gather, she was seized with another convulsion. Remembering my experience with Mrs. "M.," I gave her 15 drops of Norwood's tincture of veratrum viride hypodermically. In a few minutes she was vomiting freely a large amount of bilious matter. In a little while her consciousness was restored, pulse had dropped to 56. Upon examination per-vaginum I found no evidences of premature delivery. She was directed to keep her bed, a nervous sedative and proper cathartics prescribed. And as there was phone connection, we returned home. In two hours was again called to this case. Found my patient had been vomiting excessively, and almost incessantly. She could not raise her head from the pillow, or hardly speak for the distressing retching; a small, thready, rapid pulse, skin pale, cold and clammy; and considerable muscular exhaustion. I gave subcutaneously morphine sul. 1-4 gr. strychnia nit. 1-30 gr. This controlled the vomiting and relieved the depression, and as soon as stomach could retain it, gave her also some whisky; gave directions for a couple of hours' rest, and then to commence with the cathartics previously prescribed. This was our last visit. Learned that in a couple of days, she was up and attending to her household duties. She went on to full term without any trouble and was delivered January 12, 1911, with no untoward symptoms supervening. In this case the dose of 15 drops was attended with such excessive action as to require special means for relief and restoration. I understand it to be the teaching in some of our medical colleges for the treatment of puerperal eclampsia to never give less than 200 drops hypodermically of veratrum. I saw an article in a magazine some months ago where the author was lauding the treatment of this disease with large doses of veratrum hypodermically and otherwise, and stated that he never gave less than 20 drops by the former method; and often gave teaspoonful doses of the tincture by mouth. I have used veratrum viride more or less for over 40 years; have given it for days continuously every two or three hours, and must say have never seen an occasion when such large doses of this remedy were necessary or advisable; although we are told of exceptional instances in this disease where there has been found a tolerance of very large doses of this drug; but I insist that we should not treat every case of this kind that we run up against as one of these exceptional cases. Such doses seem dangerous to me, but I have always confined myself exclusively to Norwood's tincture of veratrum viride. Some other preparation than Norwood's tincture may have been which may account for the large doses above given. I have always found Norwood's preparation uniform in it's action, safe, and sure. That there may be a difference in the physiological action of the different preparations of this drug seems to be borne out by the remarks of Prof. H. C. Wood, Jr., in the fourteenth edition of this Therapeutics; where he says, on page 262:

"In our opinion the medical practitioner who wishes to produce a profound influence, with veratrum viride should always order and see that he gets not the veratrum of the U. S. P., but veratrum viride; for in the eighth revision of the pharmacopoeia viride was dropped as an

official title; and veratrum, defined as the dried rhizom and root of veratrum viride and veratrum album. The former is a native of America, and the latter of Europe; and while they are similar in many respects, they are not identical."

From this quotation it would appear that the difference in the dose of this remedy may be accounted for by the difference in the preparation used.

Dr. John F. Kuhn, Oklahoma City:

I want to say just a few words, and first I want to ask Dr. Stother how much bleeding there was following the expulsion of the placenta.

Dr. Strother: "Not much."

(Dr. Kuhn continuing): I expected this answer. I believe the case was handled very excellently. I think the doctor showed great fortitude. I would never have been able to wait two hours for that result. I was taught that 10 or 15 drops as an initial dose, followed by 5 drops every hour until the pulse was reduced, was the proper dosage for veratrum viride. Dr. Chas. R. Hume, Anadarko:

I think this is a timely subject. I have had several cases of post-mortem and ante-mortem eclampsia. I have seen statements that it was an acute infectious disease of twenty-four hours standing. The blood of a woman is loaded with toxin at this time. Venesection is, I think, the thing to do. I believe in venesection even if you must use normal salt solution to replace the blood taken away.

Dr. C. S. Bobo, Norman, Oklahoma:

I believe the convulsions are caused not so much by the toxemia in the blood, a peculiar condition brought about by the puerperal state, but is due largely to blood pressure. We know that in giving veratrum viride we do not rid the blood of the toxic condition, if the blood is toxic, but we do know we relieve the high blood pressure. The action of veratrum viride is to dilate the blood vessels. The dilation of the blood vessels can be so accomplished that the abdominal blood vessels will hold the entire blood supply of the person. I believe it is the elevated condition of the blood pressure that causes the convulsions.

In the case reported by the doctor, I believe there was a general toxemia, and I believe that if the bowels and excretory organs of the patient had been in proper condition, there would have been no convulsions.

It is safe for a man to leave a case of confinement when the patient's pulse is below 100, but when the pulse is above 100, the doctor had better wait and watch for developments.

Now, if the secretions had been properly stimulated and the bowels in the right condition and cleared out, I seriously doubt whether the woman would have ever had a convulsion at that time. It occurs to me that the case was more one of general toxemia than due to the puerperal state.

Dr. J. A. Hatchett, El Reno:

It appears to me that we should keep in mind preventive means. We should watch our obstetrical cases closer. We should examine the urine of women in confinement. We should use active preliminary treatment.

In my own experience I have had fourteen cases of puerperal eclampsia, and two deaths in that number. None of them had preventive treatment.

I want my people to engage me before hand. I always call for a specimen of urine. When we see a woman in convulsions there is no time for preventive measures.

It is my belief that we have overdrawn the value of *veratrum viride* as a remedy. Rapid elimination is the thing, I think; *oleum tiglli* often fails—does not act as rapidly as is supposed. I think we should keep our obstetrical cases under observation. We ought to get more money out of them, so we would be free to give them more attention.

Dr. Fair, Frederick, Oklahoma:

We cannot always depend upon the examination of urine in cases of eclampsia, for sometimes they come when the urine is all right. We should always look after the bowels. As to the headache—I am always scared when it occurs before or during labor. It is usually due to faulty elimination.

Dr. Vance, Checotah:

In thirty-three years of practice, I have met about one-half dozen cases of eclampsia. I would have met more if I had not watched cases closely and depended upon elimination and bromide of potassium.

I think a good bath is a great aid to a patient about to be confined. The skin should be in condition to act freely. There must be a good movement of the bowels. The trouble often is we are called too late. When a woman complains of headache, I certainly get scared. I remember the first case I ever saw and the last. I remember one case of eclampsia in which there were no symptoms of eclampsia until twenty-two hours after delivery. So I don't now how long we should expect to have to wait.

I have had no experience with *veratrum viride*. I look after the elimination as quickly as possible and when that is accomplished, we usually

get results, if the patent is not too far gone. In severe cases we usually practice venesection.

Dr. Risser, Blackwell, Okla.

I am glad the doctor brought out the importance of making an examination of the urine. I insist on this in every case, making examination at least twice a month. I think we should educate the public in these matters. They should know the importance of these things which have so often been overlooked.

Dr. Strother, closing:

I have noticed in giving veratrum viride the patient always throws up a good deal of bad matter.

As to preventing cases of eclampsia—of course we can do that if we can use preventive treatment, but in all the cases I have had there has been no chance for preventive treatment.

A good many physicians seem to be afraid of veratrum viride and give it in very small doses, only two or three drops. I remember a woman who took it by mistake once, thinking it was turpentine. Nothing untoward happened, and I have never been afraid to give it since, and always give five drops.

A CASE OF ACUTE CATARRHAL LARYNGITIS (NOT DIPHTHERITIC) REQUIRING INTUBATION.

By Dr. D. D. McHenry, Oklahoma City, Okla.

Early on the morning of Dec. 17th, I was hurriedly called by Dr. F. K. Camp to come and intubate a case for him.

Obtained the following history: On the night of the 14th, three nights before, he was called to see Laura B., nine years of age, for what the parents said was an attack of croup. The child was suffering from a severe attack of acute coryza, and, in Dr. Camp's opinion, this attack was not regular croup, but seemed to him to be more of a choking attack from extension of the coryza to the throat. He used the usual emetics and expectorants and soon relieved the child of the severe dyspnea. It was some better but not relieved during the next day. Had a temperature of 101, rapid somewhat labored breathing, dry metallic cough, very hoarse, no pain in the throat, general malaise. The second night it had a similar attack which was relieved by about the same treatment, and on the second day was, if any different, slightly better than the day before. The third night at midnight it had the third attack. As the doctor had left some emetic and other treatment for the attacks the parents used this. The child getting no relief they called the doctor early the next morning. He found more dyspnea than before, child slightly cyanotic, and immediately put a nurse on the case and had the child put under a croup tent. But the dyspnea and cyanosis gradually increased, so he sent for me to intubate.

A superficial and hurried examination showed: Pulse 144; Temp. 102; Resp. 40. Severe dyspnea with difficult expiration as well as inspiration. No stridulous breathing, or at least not the typical inspiratory sound you get with spasmodic laryngitis or so-called false croup. Could speak only in very faint whisper, tonsils free and not enlarged. Decided inflammation of pharynx and nares. No enlargement of the glands of the neck. Lungs clear, excepting coarse mucous rales in the larger bronchial tubes. Hoarse barking metallic cough, with expectoration of mucous or slightly mucopurulent secretion. Struggling and gasping for air. In fact all the indications of immediate dissolution. No signs of other disease, and wish to say here that a very careful physical examination later in the day by Drs. Camp, Fishman and myself failed to reveal any other complications.

I intubated at once, which relieved the dyspnea and soon the cyanosis, and the child went to asleep.

I at first thought we had laryngeal diphtheria, though some of the typical symptoms were missing. At my suggestion 5,000 units of antitoxine

were given, repeated in four hours. The gradually increasing obstruction was the main reason for the diagnosis. And had I another case like it to-day I would give it the antitoxine, as I did here, until my diagnosis was confirmed or disapproved by culture; slide, and further study of the case. In defense of Dr. Camp, wish to say he never agreed with that diagnosis.

Beginning with the secretion adhering to my finger after intubating, we had three microscopical examinations and a culture made by Dr. C. J. Fishman on this date, and two more slides and another culture on succeeding dates but never found any Klebs-Loeffler bacilli. In fact culture showed no bacilli, only a few unidentified cocci.

The obturator in the proper sized tube for this aged child in my set would not work easily, so in the emergency I used the next size smaller. About three hours later in a severe paroxysm of coughing the child dislodged the tube and swallowed it.

As she breathed with less labor and I was nearby we did not introduce another at once. However the dyspnea slowly but gradually increased until by 7:30 p. m. she again became slightly cyanotic and, failing to be relieved by other treatment, we introduced another tube. This was ten hours after the first tube was introduced.

The child suffered from weak heart and general depression for the next twenty-four hours requiring vigorous stimulation. Tube was left in three days. Temperature run from 99.6 to 102.8 degrees. Removal of the tube was followed by slight dyspnea which passed off in a few hours. She still had some fever, cough, some expectoration and loss of voice for the next four days, that being the last time I saw the case. However she made a slow uneventful recovery with complete restoration of voice.

What disease produces such a set of symptoms and such a history as this? Some men at least would immediately reply croup. It certainly simulated the so-called false as well as true croup.

That leads us to ask what is croup? Why do we use the term? What do we mean by it, and what does it tell us? The word is of Scotch origin, meaning to croak or to cry with a hoarse voice. Lippincott's medical dictionary defines it as: "A disease marked by laborious breathing, with a stridulous noise, short dry cough and expectoration of a concrete membranous sputum. Gould gives a similar meaningless definition for the general term, and then defines catarrhal, spasmodic or false croup as 'An affliction of childhood characterized by paroxysms of intense dyspnea and a peculiar ringing metallic cough.'" None of these definitions tell us the organs affected or anything about the pathology.

I think the term is obsolete and should be discarded by scientific men. It means no more than to say a man has neuralgia, stomach ache, cough, etc. Were I to use the term at all I would define it as an acute temporary

obstruction or stenosis of the larynx. You immediately reply that includes more than we mean by croup. Very true, and only another reason why we should discard the term.

In this case under consideration we certainly had an acute obstruction of or in the larynx. What are the causes of such obstruction?

I would divide then into three classes. 1st. Mechanical; 2nd. Reflex; and 3rd. Inflammatory.

In the first class we would have foreign body and non-inflammatory edema.

Certainly the best way to have determined if it was either of these conditions, or just what was the condition for that matter, would have been by a careful examination of the larynx. I find this is difficult and many times impossible in children. This child was quite unruly, and we were never able to get a good laryngoscopic view. I did not use the bronchoscope as the condition of the child was such that we did not consider it safe to give a general anesthetic which is necessary in bronchoscopic examinations in children. Will state an X-ray examination was negative. Hence we will have to draw our conclusions from the clinical history and objective symptoms, and hope by the study of these to be able by exclusion to determine the cause for this obstruction.

Had it been foreign body the obstruction would have come on suddenly, been continuous from the first, and would not have accounted early in the trouble for the inflammatory symptoms.

If it was non-inflammatory edema it lacked the chief causes; namely renal or heart disease. Neither would it account for the inflammatory symptoms. So I think we can without further consideration exclude both.

In the second class we have laryngismus stridulous and laryngitis stridula or spasmodic laryngitis. I have placed the latter in this group, realizing that many classify it with the inflammations.

These two conditions are used synonymously by many text books, but I think a distinction should be made. Laryngismus stridulous is a neurosis, almost always occurring in rachitic or marasmic children. Its predisposing cause an excitable, nervous system and its exciting cause an irritation, probably remote from the larynx, as worms or indigestion, or it may be due to adenoids, other nasal obstructions, etc. We sometimes get a spasm similar to it from strong local applications to the larynx, pharynx, or even post nasal space. It is purely a spasm of the muscles of the larynx without inflammation.

Spasmodic laryngitis has the same predisposing nervous element. But for its exciting cause it has an inflammation of the larynx, or pharynx. Hence some classify it with the inflammations. I think the reflex nervous element predominates. Certainly all children do not have this element, else

all children with laryngitis would have accompanying spasm which we all know they do not. However it has the decided inflammation that is not present in laryngismus stridulous. And I think it should be called spasmodic laryngitis and not such a vague meaningless term, as false croup.

In our case laryngismus stridulous would not account for the inflammatory symptoms. It would have come on suddenly and would have either died or been relieved hours before I relieved it by intubation.

As to spasmodic laryngitis; the embarrassed expiration as well as inspiration, and consequently the lack of the peculiar stridor; the gradual increase of the obstruction in the last attack for nine hours, and the fact that the symptoms were not relieved during the day, between attacks, I think rules that out.

That leaves us the third class or inflammatory obstructions. That will include:

- 1st. Acute catarrhal laryngitis.
- 2nd. Edematous laryngitis.
- 3rd. Membranous laryngitis.
- 4th. Acute septic laryngitis abscess.
- 5th. Peri-chondritis.

As there was no pain, or tenderness on pressure over the larynx, the two prominent symptoms of acute septic laryngitis and peri-chondritis, we rule them both out.

As we had no membrane, and as nearly all cases of membranous laryngitis are diphtheritic and as we found no Klebs-Loeffler bacillus or other specific germ we will exclude that.

That leaves us acute catarrhal and edematous laryngitis. I remarked early in my diagnosis of this case that we were never able to get a good examination of the larynx. So I am not certain there was not some edema. The arytenoids and epiglottis both showed some swelling by palpation when intubating. But it lacked the suddenness of edema, and the elder DaCosta—that king of diagnosticians—says, “Expiration is comparatively unimpaired in edema.” Andrews states in his text book that Rice reports from the study of forty-one cases, that it is doubtful if edema ever occurs from simple catarrhal inflammation. So I can not be certain, but I think we had only inflammatory swelling of probably the submucous tissue as well as the mucous membrane, and no edema.

That leaves our diagnosis acute catarrhal laryngitis. Let us summarize the case, and see if the symptoms will not fit the disease.

The first case had acute coryza with fever, dry metallic cough, hoarseness and later aphonia; No discernable membrane or no specific germ; No

complications except the coryza outside the larynx. Child had three distinct attacks of dyspnea with obstruction to expiration as well as inspiration, and never entirely relieved from the first attack. The third attack not being relieved by any medical treatment but showing a gradual increase of the obstruction for nine hours. In fact the usual symptoms of acute laryngitis for the first two days when it became more severe.

With such a chain of symptoms, I think I am justified in diagnosing this case acute catarrhal laryngitis with sufficient swelling, or possibly some edema, to cause obstruction requiring intubation or some surgical means to preserve life.

Cases of this severity are rare. This being the only one in my experience that I diagnosed as such. Rotch says he has seen a case requiring intubation. Kerley says: "Occasionally a case will be seen with marked laryngeal obstruction due to swelling and laryngeal spasm that will require intubation, but in my experience this is very rare." Ballenger says: "In extreme cases it may be necessary to intubate, but these extreme measures are rarely necessary." Butler says: "He has seen a case of scarlet fever requiring intubation and another of severe catarrhal laryngitis, requiring tracheotomy, in neither of which was there edema or false membrane."

I remarked that this is the first case of such severity in my own practice that I had diagnosed as such. That brings to my mind several cases in the early years of my general practice that I diagnosed and treated as laryngeal diphtheria, yet in which I was never able to find the Klebs-Loeffler bacillus and never certain I had a membrane.

Most medical men today say all membranous laryngitis is diphtheritic. But there is another small class that say we have a distinct disease—a membranous croup. I am willing to agree with this latter class that very, very rarely we have a membrane in the larynx similar to the membrane in the throat in scarlet fever and sometimes in measles, of streptococcic origin, and described by Holt and some others as pseudo-diphtheria, but I would call it streptococcic membranous laryngitis, not membranous croup. However these cases are so very rare, and in many of them we are unable to positively identify a membrane, that I am inclined to think many put in this latter class are severe acute catarrhal laryngitis. Holt says, he has "More than once seen cases at autopsy to be catarrhal, which were regarded during life to be undoubtedly membranous." If he with his vast experience made such mistakes, why not others? And may not many of these cases reported as membranous croup have been like this one we are considering? And had this case occurred in the hands of men of this belief, or occurred in the hands of any man who does not do intubation or tracheotomy and died, as it undoubtedly would have without some surgical relief, would they not have recorded it as membranous croup? I certainly think they would. I also now think the cases I spoke of in my early practice were severe acute catarrhal laryngitis. Fortunately for me they were not quite so severe as

this case recovered, so I gave antitoxine the credit. And I believe many other men have been having the same experience and making the same mistake that I did. And I believe that if these men, who still contend that we have a distinct membranous laryngitis apart from the diphtheritic, will study their cases a little more closely, they will find that many of them are severe acute catarrhal laryngitis.

At least I think the subject worthy of more careful study, not only by the general practitioner, but especially by we men making a special study of this line of work, to see if we can not at least get rid of that misnomer, membranous croup.

THE DIAGNOSIS AND TREATMENT OF ACUTE APPENDICITIS, WITH SPECIAL REFERENCE TO CONTROLLING THE INFECTION BEFORE AND AFTER OPERATIONS.

By J. E. Gilcreest, M. D., Gainesville, Texas.

When your President honored me by asking me to read a paper at this meeting of your society, I was at a loss to know what subject would prove the most valuable to you, and in selecting the one I have, I did not expect it to be of material benefit to the experienced surgeon who has spent much of his time in this work and had an opportunity to visit many fine clinics in the large cities every year. But I hope our co-workers in medicine who do not pose as surgeons, but spend all their time in general practice, and only see a few cases of appendicitis each year will receive some benefit from this paper. The general practitioner is the man who usually has to make the diagnosis, and suggest the treatment, this is a grave responsibility but he must meet it, and should be able to act quickly as time is valuable when your patient has acute appendicitis.

I will quote here a few of the aphorisms in appendicitis for the general practitioner, given by Howard Kelley, in his most excellent work on appendicitis, which was published in 1909.

1. Appendicitis is the commonest of all acute intra-abdominal conditions.
2. In all cases of severe abdominal pain, withhold morphine until the diagnosis is clear and appendicitis excluded or included.
3. Then give morphine, as the best treatment is to "Splint" the bowels.
4. Never give purgatives in appendicitis.
5. The treatment of appendicitis is just the opposite of that of colic from ingestion of irritating substances; it therefore requires great care in differentiating.
6. Appendicitis, as a rule, starts unexpectedly, as for example in the middle of the night, without any apparent reason in indiscretion of diet, etc.
7. Appendicitis often also starts in when there is abundant cause of some-kind in the way of trauma or over exertion, which apparently and plausibly accounts for the pain. Always be on guard in these deceptive cases.
8. Note well that a pain exclusively in the left side does not exclude appendicitis. A long appendix and a movable colon, due to a long mesoco-

lon can be found anywhere from the left inguinal canal and iliac fossa to the gall-bladder and under the surface of the liver.

9. The temperature in an appendicitis case is of the utmost importance. It ought to be taken at frequent intervals. A moderate temperature, of 99.5 degrees or 100 degrees F., associated with local symptoms in the right iliac fossa, may indicate a gangrenous appendix. This is the group where the general practitioner is most apt to err and defer an operation until it is too late. He ought here, until he feels secure on the basis of his own experience, to consult with a surgeon of experience.

10. Sometimes the leucocyte count goes up before there is any elevation of temperature and is therefore a valuable guide.

11. In a case of typhoid, we do not get an ascending leucocyte count.

12. It is important to remember that the early history of typhoid is often, like appendicitis, due to swelling of the glands in the appendix.

13. Typhoid appendicitis rarely calls for operation, and it is always a lamentable misfortune to subject such a patient to an unnecessary surgical operation with a long wearing illness before him.

14. Sometimes a man of experience will recognize a grave appendicitis in a case with a dusky or anxious drawn expression, with a slight rise in temperature, and slight but positive symptoms in the right iliac fossa. The general practitioner must cultivate this keen eye which detects the enemy at a glance.

15. Often a patient will present definite local symptoms, but nothing can be felt and he has little fever, and the practitioner will rather reluctantly advise an operation; when, however, the patient is on the table, fully relaxed under anaesthetic, a well defined mass can be felt and the situation becomes clear, and it is evident that an operation was advisable.

16. Of all local symptoms muscle spasm is most important. Remember that a local spasm of muscle guarding a tender area of peritoneum is different from a plastron, or a hard area due to inflammation with surrounding inflammatory products.

17. Remember that a careful examination of urine often serves to differentiate an appendicial case from a ureteral calculus at or near the pelvic brim, by showing the presence of blood and pus in the urine. If no abnormal constituents are found in the urine, a calculus is excluded. Occasionally an inflamed appendix adherent to the bladder will cause the presence of blood and pus in the urine, but this is rare.

18. It is better to operate occasionally in error in a doubtful case than to wait too long for more positive signs and to lose a life now and then. No patient is ever killed by a skillful early operation. Many die for want of one.

19. However, this facility with which an operation can be done must not be used as an excuse for slipshod diagnosis and unnecessary operations.

The diagnosis can often be correctly made by a school child, and, again the surgeon of experience will have considerable trouble in making a decision. The cardinal symptoms of acute appendicitis are a sudden onset of pain in the abdomen, usually more or less diffused over the whole abdomen, and in a few hours being more confined to the right side, but often varying in location as the appendix or its disease focus may be some distance from Mc. Burney's point. This onset is often followed by nausea and vomiting. I have found the end of the appendix perforated, and on the side of the umbilicus, and in other cases, I have found it under the right border of the liver. The conditions that are often mistaken for acute appendicitis are renal colic, intestinal colic, intestinal ulcers, hepatic colic, and diseases of the gall bladder. Intussusceptions and other obstructions may closely resemble acute appendicitis, as they often have a sudden onset with severe colicky pain, vomiting and collapse. An illustrative case.

I had recently brought to me a ten year old boy who suffered from acute volvulus of possibly traumatic origin, and who had been treated for appendicitis with all kinds of purgatives for two days. He had been taken suddenly ill with severe pain in lower abdomen and vomiting, which occurred every few minutes. His pulse was rapid and temperature sub-normal. He was in the Sanitarium 24 hours, his condition gradually growing worse before his mother would consent to an operation. She said she had heard of many undergoing operations, but had never heard of a recovery from one. But she finally consented and when the abdomen was opened in median line the peritoneal cavity was filled with a milky fluid, the small intestines on the right side were covered with an exudation and bound together by adhesions. The caecum was normal and not distended; so then I followed the small intestines to the seat of trouble, which was a kinking of a loop of small bowel; it was so firmly bound together that, in separating the adhesions, a tear two inches long occurred in the serous coat of the bowels. I closed this with fine cat-gut, separated all adhesions, wiped out the cavity with gauze sponges, made a stab cigarette-drain in the side over the seat of trouble, closed the incision, washed out the stomach, put the patient to bed in the Fowler position, and started the Murphy drip, giving one-half pint normal salt solution each hour for the first four hours; afterwards continuing it, but not so fast. The patient continued vomiting dark green fluid at intervals. I washed out the stomach about every 6 hours for 24 hours, and the vomiting lessened after each washing. The last time I got very little of the green fluid, and the vomiting ceased altogether. He had great distention and considerable pain for the first 48 hours, and a weak, rapid pulse and subnormal temperature most of the time, although his temperature reached 100 a few times. I gave one-half oz. milk magnesia by mouth every three hours after vomiting had stopped. The bowels moved on the third day, the distention grew less and all symptoms improved. I did not give him any

nourishment by mouth until bowels had moved, but used 1 oz. liquid peptonoids to 8 oz. of normal salt solution about every four hours. There was drainage through the cigarette-drains the first 24 hours. The abdominal wound suppurated and was slow healing, but the patient made a good recovery. Had I been permitted to operate 24 hours earlier his condition would not have been so serious.

In children we often encounter much more trouble in making a diagnosis than in adults. Acute indigestion, pneumonia, pleurisy and hip joint disease are all sometimes mistaken for appendicitis. V. P. Gibney has mentioned, in a paper he read on hip-joint disease, several cases that had been diagnosed appendicitis. I was called to see a man a few years ago who had been taken sick early in the morning with a pain in the right side of the abdomen; he had some fever and tenderness over Mc. Burney's point; that afternoon he was still a little tender over the appendix, but he had a well developed case of pneumonia in lower lobe of right lung which lasted a week. He had no more trouble about the appendix. Had I examined his lungs carefully on my first visit I would have detected the trouble then.

Too much stress cannot be put on making an early diagnosis in acute appendicitis, as it may mean the saving of the life of your patient. When we consider that more lives are lost from this condition than from any other acute abdominal disease, we should be always vigilant and careful; if an early diagnosis be made, and prompt surgical service secured, recovery is almost certain. If in doubt and you are not an experienced surgeon, consult one at once, if possible; put yourself in the patient's place, ask yourself what you would do under similar circumstances. Would you be operated on at home under bad environments or would you try to get to a hospital where the surroundings would be more favorable. Our duty is to do the best for our patients who have put their lives in our hands, and look to us to save them.

Treatment.

When you are called to a patient who has symptoms of acute appendicitis, and you are not certain, do not give anything until you can make the diagnosis. Opiates will mask the condition and lull you and the patient into the idea to wait, which may be fatal. Do not give a purgative, as you may have an appendix ready to perforate and the increased distention and gas caused by the purgative may cause the rupture and general peritonitis. I am sorry to find a good many general practitioners all over the country who always try to clear out the bowels the first thing by giving calomel, compound cathartic pills or salts, all of which adds fuel to the fire.

At the present time all the best authorities are agreed on absolute rest splinting the bowels as soon as a diagnosis is made. An operation should be done at the earliest possible moment. While 9 out of 10 with proper treatment will recover from the first attack without an operation, you never know whether this patient will be the fatal case or not, and you would

not like to take one chance out of ten for your life. Do not wait till morning or the next day to see how your patient will be, as you may have a perforated appendix and general peritonitis when that time arrives. Remember if your patient does recover from one attack, nine chances to one, this first attack will be followed by others, which usually grow more severe. If the first attack is mild and recovered from quickly, the patient will feel more certain when another one occurs that he will soon recover from it, and he will postpone an operation. If the patient refuses an operation, then, the best thing to do is to withhold all medicine and nourishment by mouth, if the rectum is full use an ounce of glycerine in eight of water, which will cause the rectum to be emptied. Put the patient in the Fowler position, by raising the head of the bed 18 inches, arranging pillows under the head and body, and a roll against the hips to prevent the patient from slipping down in the bed; give just enough morphine hypodermically or by rectum to relieve the pain and quiet the bowels, but not to stupefy the patient. Now start the normal salt solution by the Murphy drip, which should continue 2 or 3 hours, and then stop for an hour and then begin again. The elevation of the patient's body prevents the ascending of infection towards the diaphragm. The withholding of all food and purgatives helps to splint the bowels and assists in walling off the infection near the pelvis. The normal salt solutions increases all secretions, reverses the current of lymph in the peritoneal lymphatics, so instead of absorption taking place from the peritoneal surface the mouths of the lymphatics pour out fluid, bathing the peritoneum with this free discharge. This treatment gives your patient the best chance to tide over an attack. This treatment is still more applicable in cases of septic peritonitis from perforated appendicitis, where abscesses have formed and are operated on. Keeping the patient in the Fowler position and introducing large quantities of normal salt solution in the rectum and, in extreme cases, hypodermoclysis of a pint under the breasts will help to rally the patient. Murphy has been using this treatment for seven years with universally good results. Of his first 40 cases of septic peritonitis treated this way, 39 recovered. Dr. R. G. Le Cont states that in the Pennsylvania Hospital they had, previous to adopting this treatment, a mortality of from 70 to 80 per cent in septic peritonitis. Dr. A. G. Gerster gives tabulated statistics of all the cases of diffuse peritonitis of appendicular origin treated in Mount Sinai Hospital from 1899 to 1908, which show clearly a great decrease in the mortality. In 1899 the mortality was 79 per cent. This death rate decreased each year and in 1908 Dr. Gerster's mortality was 14 per cent, while he was using the Murphy treatment. Murphy's mortality was only about 4 per cent. Gerster claims this difference is caused by the time of operation. In none of Murphy's cases had more than 40 hours elapsed between the perforation and the onset of peritonitis and the operation, and some were operated on in three hours, the usual time before operations being 22 to 30 hours. Gerster did not get to operate so early—some of his cases waited 6 or 7 days.

These statistics confirm the conclusion drawn from Murphy's report, that, in peritonitis, an early diagnosis and an early operation offer the best promise of increasing success. It also demonstrates that a rational treatment of the far-gone, neglected cases, formerly considered hopeless, will succeed in saving a respectable and increasing proportion of patients.

Discussion.

Dr. C. S. Bobo, Norman, Oklahoma:

I certainly enjoyed Dr. Gilcreest's paper. I don't think there is any man more competent to give a paper that can be appreciated by the general practitioner than Dr. Gilcreest. He has gone over the road and has come in contact with all these conditions and has met them in a practical way.

His paper in dealing with symptoms of appendicitis and pain in the appendix—we all know that it is the function of the general practitioner to find out what we have and deal with accordingly. The first pain is misleading, and the general practitioner who does not study the conditions thoroughly is frequently misled by attaching too much importance to the pain. In some cases the pain may be located over McBurney's point, but many times it is reflex, especially in the child, and is found on the other side. That is where the general practitioner must be careful in making a diagnosis—in dealing with the child. In many cases of pneumonia in child the pain is frequently referred to the stomach—entirely away from the lung and away from the seat of the real trouble. And as Dr. Gilcreest forcibly said, in many cases life is dependent upon the right diagnosis and an early diagnosis.

Dr. G. R. Gordon, Wagoner, Okla.:

I certainly appreciated the paper and think it a very important subject.

One point I want to emphasize, that is, consulting the patient's interest. I have seen many cases where the physician from one reason or another would operate before he really knew what was best for the patient. I think we should consider more carefully what is for the interest of the patient.

Dr. W. C. Graves, McAlester, Okla.:

I was especially interested in Dr. Gilcreest's paper from a personal standpoint. Dr. Gilcreest was a practitioner of medicine in my home town when I was a boy, and was a great friend of my father's.

I was therefore interested from that view point and was interested also in what he had to say with reference to the drip method of normal salt solu-

tion. I have seen it used with great success. There is one thing he did not mention that I remember he used to use, that is, the ice pack. I would like to know if he still uses it.

Dr. Virgil Berry, Okmulgee, Oklahoma:

One thing I want to say, we are getting to a better day. We often used to run across cases where the patient was practically dying before we were allowed to do anything surgically. Now, when we make the diagnosis, we advise operation and permission is usually given.

Normal salt solution in the bowel of these patients enables us to save lives that were formerly lost. However, I do not believe it is important to give it by the drop method of Murphy. I fill the bowel full, and after absorption, fill it again. The essential thing is to use plenty of it and to have it as hot as can be well borne.

I recently operated on a little girl at Okemah, who had had repeated and frequent attacks of appendicitis, and who had drifted into a very grave condition by delay. When operated the bowels were bound together by a dense mass of adhesions. The appendix was deeply situated, posterior type, and very difficult of removal, necessitating a long, tedious operation. Shock was considerable, and her life was saved by the use of hot saline solution in the bowel.

We feel sure that these cases are often saved by this method and that they were formerly lost before the introduction of the method by Murphy. However, I am of the opinion that in some cases, especially in shock, the filling of the bowel with several pints of the hot solution is superior to the drop method of Murphy.

When you diagnose appendicitis and don't want to operate, keep the patient quiet and don't feed him. I think many deaths have been brought about my feeding patients and the use of purgatives. Rest is essential. Don't feed patient. I think every case of appendicitis is operable.

Dr. Tilley, Muskogee, Oklahoma:

I think the doctor from Texas gave us a most excellent paper, and I fully concur in his ideas and believe that appendicitis has come to stay. I heard a rather radical paper recently in which it was stated that the only way to do away with appendicitis was to operate on the newly born and breed it out.

I must confess that I am surprised that a gentleman should say that the larger per cent of cases would get well without operation. I don't believe the day will ever come when we shall cease operating for appendicitis, or

when we should cease. There is no man who can tell which kind of cases are going to prove serious and which are not.

The gentlemen who preceded me said, "Anybody can do an operation for appendicitis." I take issue with him. I don't believe that everybody can do an operation for appendicitis.

I have operated on more than sixty cases in the past fifteen months---not always for that alone, but I have removed the appendix. Sometimes there was nothing the matter with the appendix, but I was in there and simply removed it while I had the opportunity, to avoid future trouble. I think there are two dangerous classes of physicians. One is the class that always advise an operation for appendicitis when ever a man, woman or child has a pain in the abdomen; and the other class is one that fails to realize when an operation is absolutely necessary. The doctor who always advocates an operation when a man has a pain in the abdomen, regardless of its exact location and nature, is to be avoided, but if a man has an appendix that is going to form pus it better be out.

As to the matter of hot and cold applications, I don't take much stock in them.

Personally, I believe if a patient is in good condition that the appendix should be removed as soon as you know they have appendicitis, whether or not they have pus. This thing of waiting to see whether or not they have pus is a good deal like the idea of the old army surgeon. He thought if a man was wounded that there should be pus and the wound should take time to heal. If it did not have pus and healed quickly, he was scared. I think there is as much sense in that as in waiting today to see whether or not pus forms when you know a patient has appendicitis. No man can tell whether there is an appendix that will kill a man or not, so I say, why leave it in there?

As to the diagnosis of appendicitis, it is not always an easy matter. I found an appendix recently on the left side.

I think Dr. Gilcreest's paper is most excellent, and I thank him for it.

Dr. Breese, Henryetta, Oklahoma:

I want five minutes to talk from the standpoint of the general practitioner from a backwoods town.

I can see no reason why the general practitioner should not be as good a diagnostician as the general surgeon. I think that in these cases if you find pus they should be operated on. I never operated on one in my life, but if I had a case that was operable I got it to some one who could operate and every case has recovered.

But there are a large number of cases which can be cured with castor oil and enemata—these are not appendicitis.

Some time ago I was called to see a young woman who jumped from a porch, sustained an injury, pain set in and the trouble was diagnosed as ovaritis by the attending physician, but she grew worse, and after two or three weeks I was called and diagnosed appendicitis. She was operated on, but it was just a week too late. Gentlemen, it is diagnosis the general physician needs—if he can give this, he will save his patient.

Dr. Gilcreest, closing:

I thank you very much for the liberal discussion of this paper. The general practitioner is, as I said, the man who comes into contact with the majority of cases. If he can diagnose the case quickly, he can do the patient very much good. If the case requires operation and the doctor is not a surgeon, get it to some one who can operate.

I don't agree with the man who says that nine out of ten cases operated on need not be. I think if diagnosis for appendicitis is made, the operation should be done almost immediately. There ought not to be one-half of one per cent of the cases lost when the trouble is confined to the appendix. My experience is, gentlemen, that the mortality is much larger in the cases that are treated by medicine at first and wait for the more serious developments before resorting to operation, than in those that are operated early. If a child is to be operated on, it should be done very early as infection seems to spread more rapidly in children than in older persons.

It is often best, in isolated cases in the country, where the general practitioner has no facilities and cannot get a surgeon in time, to resort to the treatment outlined in paper. Nine out of ten cases will tide over the first attack and then a surgeon can be gotten. Many times, if the treatment is commenced early, and the patient kept in Fowler's position, and all these things are done, the patient will die when an early operation would have saved him.

I thank you.

MANAGEMENT OF NORMAL LABOR.

Dr. G. W. Graves, Hitchita, Okla.

In order to properly manage a case of normal labor the obstetrician must first understand the normal mechanism of labor, in order to guard against any departure from the normal course.

Granted that the young follower of Hippocrates has sufficiently schooled himself in the natural processes that have brought so many frail pieces of humanity to the light of day, we will imagine him with fast beating heart and many misgivings, hurriedly proceeding to receive his baptism in the obstetrical art.

Upon entering the lying-in chamber he greets all with as much composure as possible, deposits his bags and baggage in the most suitable place and in a quiet manner asks after the general health of the patient. Time of cessation of menses; number of children previously born, character of previous labors, etc.

If he has used the time well he has probably gained the desired information and the confidence of his patient at once and the same time, then he should after assuring himself that his hands are sufficiently warm as to not be uncomfortable to the patient proceed to make an external examination of the abdomen, determining by palpitation, the position in which the child is lying, in this the location of the foetal heart by the aid of the stethoscope will often be an advantage. At this time it is well to examine the woman's heart also, in order to get an idea as to the safety of inducing complete anesthesia should necessity arise.

Then he has the nurse to provide a basin of warm water, towels, etc., and he proceeds to as nearly sterilize his hands as possible, for this purpose I believe a thorough scrubbing with green soap and hot water followed by alcohol is as good as anything.

While the physician is cleansing his hands, it is well to have the nurse scrub the external genitalia, thighs and buttocks with a 1-1000 solution of bichloride. The obstetrician then takes his seat at the bedside and informs his patient that it is necessary to further examine her, and after instructing her to assume the proper position, i. e. flat on her back near edge of bed with the knees flexed, he introduces his hands beneath the bedclothing, carefully avoiding letting his right hand touch anything until he has with his left hand separated the labia, then he introduces his index finger and determines, first the condition of the perinaeum. The amount of vaginal secretion, whether or not the rectum is loaded with feces. The length of the vagina. The condition of the cervix as to dilatation, also as to the thickness of the rim

of the cervix. At the same time he may by examining the foetal head determine is just what position the head is entering the superior strait; yet with an experience of nearly five hundred cases I confess that I am often unable to satisfy myself in what position the head is lying. He will also try to get a fair estimate of amount of space afforded by the pelvic outlet; if he finds no deformity and the promontory of the sacrum is out, or nearly out of reach of the index finger of ordinary length he may rest fairly easy as to the outlet being ample to accommodate the advancing head.

If he has found the rectum to be loaded with feces he should instruct the nurse to administer an enema of warm, soapy water.

If he has so far found everything normal he assures his patient that all is well and there is no cause for alarm, at the same time he may give the patient such information as he sees fit as to the length of time that will probably elapse before the labor is completed, always giving himself plenty of leeway in case of unforeseen delay. Now comes the hardest part of the busy doctor's work, WAITING. However, it is well to remember that OLD MOTHER NATURE is the kindest and most effective factor in accouchement, and delivery by her methods is the ideal delivery.

The physician should make hourly examinations to determine the progress of the labor. If the os is thick and resistant and pains are severe inhalations of chloroform will give quite a little relief. For administration of chloroform I use a special inhaler (exhibits same) allowing the woman to use her own pleasure as to how long and how often to inhale, since the inhaler drops from her hand as soon as she becomes unconscious and the first breath of air restores consciousness. And the chloroform not only relieves the pain, but also makes it possible for her to refrain from bearing down, which at this stage only exhausts her strength, without forwarding the progress of the labor.

As soon as full dilatation of the cervix is obtained the membranes should be ruptured by pressure made near the rim of the cervix with some blunt instrument during a pain. The reason for this precaution is to avoid a sudden outpouring of the waters and probably bringing down of the cord allowing it to become wedged between the descending head and the pelvic wall, thereby endangering the child's life.

Management of the second stage of labor requires considerable tact on the part of the attendant, from time to time he examines his patient and notes progress made, if progress is extremely slow and the pains are weak a large dose of quinine (15 grs.) will sometimes stimulate them to a satisfactory degree.

Quite often when progress is slow a change of posture on the part of the patient increases the force of the pains and helps the little passenger along on his voyage to an untried world.

During the second stage the woman is instructed to take a full breath

and bear down when a pain comes on, and I have considerable trouble in getting them to do this, yet it is worth while to try as it is a means of shortening the labor.

As the head advances, the attendant should push back the folds of the superior vaginal wall that collect between the oncoming head and the symphysis pubis, since pressure exerted on the tissues for an hour or two may cause sloughing of the tissues allowing infection to enter, thereby causing a long drawn out lying-in period, whereas it might have been shorter.

The next important step for the physician is preservation of the perinaeum. I suppose there are almost as many methods as there is obstetricians. My usual method is when the head begins to bulge the perinaeum I make light pressure with the palm of the hand against the bulging tissue. When the occiput is protruding through the valva I try to force the head upward toward the symphysis pubis by making pressure with two or three fingers of the right hand, the tips of the fingers just in front of the tip of the coccyx the palm supporting and lifting up the perineal body. I believe this method will save as many tears as any, but sometimes rupture will occur in spite of our best efforts, and I wish to here express myself as having no patience with the obstetrician who so blandly tells us that in several hundred deliveries he has not had any lacerations of sufficient severity to necessitate repair. He simply is too careless to examine and find them.

It is a common error among young physicians to think when the head is safely through the vulva all danger of laceration is over, such is not the case by any means, as I have found that as many lacerations occur from the passage of the shoulders as the head.

If I find there is imminent danger of laceration of the perinaeum I try to produce complete surgical anesthesia, and now I do not depend on the inhaler previously spoken of but use a mask and drop bottle. This will usually cause the pains to cease for a short time and give a chance to work the head and shoulders through, while the tissues are relaxed between pains.

If the patient is not anesthetised the force of the pains may be diminished and delivery delayed by making backward pressure on the head and having the woman open her mouth and breathe while the pain is on. In this manner a little time may be gained and the tissues allowed to stretch a little more and a severe perineal rent be avoided.

After the head is expelled, the infant's eyes, nose and mouth should be cleansed of mucus, if the umbilical cord is wrapped around the child's neck it should be removed by slipping the coils over the child's head if this can be done, if not the cord may sometimes be loosened sufficiently to allow the child's body to pass through the coils; failing in this, the cord should be ligated in two places about an inch apart and severed between the ligatures when the free ends may be unwound and delivery quickly completed by manual effort.

Next comes the delivery of the shoulders, and the perinaeum should be guarded by placing the palm of the hand across the perinaeum the radial border pressing upward on the shoulders and the body of the child, allowing it to glide out over the edge of the hand, rather than over the perinaeum.

After the child is delivered the next step is severing the cord, a simple procedure within itself, but one of great moment to the frail little being so lately ushered into strange surroundings.

There is great difference of opinion as to the propriety of early or late ligation of the cord. Personally, I believe there is a decided advantage in late ligation, for when the cord is allowed to remain intact until pulsations have almost or entirely ceased, the child will have obtained two or three ounces more blood than when ligated early, and taking into consideration the fact that the average infant has only about six ounces of blood in its vessels, we can readily see the disadvantage of robbing it of two or three ounces.

After pulsations have grown weak or ceased entirely, I place a strong artery forcep about half an inch from the margin and another half an inch further away than the first and sever the cord between. The cord is afterward tied with aseptic tape in the depression made by the forceps; this is done after the baby has had his bath. Then I dust the stump thickly with antiseptic powder, wrap it in aseptic gauze and apply adhesive plaster binder.

The third stage consists of delivery of the placenta and retraction of the uterus. It is my practice to follow the expulsion of the child down with the left hand on the fundus of the uterus grasping and kneading the uterus from time to time as indicated by a relaxing of its walls, when after-pains begin I grasp the fundus and make pressure downward and in axis of the pelvic canal simultaneous with the pain, at the same time making slight traction on the cord. I make traction on the cord in the face of adverse teachings of many authors yet believe 90 per cent of the placentas delivered by obstetricians get some traction on the cord.

I give ergot to very few women. The time-honored custom of giving every woman a teaspoonful of ergot as soon as her baby is born to prevent uterine hemorrhage is a farce, because the hemorrhage is checked or the woman is a corpse before the ergot takes effect. When you have hemorrhage and do not feel that you can do your whole duty to your patient without giving ergot don't fool with the f. e. but give some of the hypodermic preparation and remember that it has to be repeated in thirty or forty minutes to maintain effect.

Knead the uterus to expel clots, maintain contraction and prevent hemorrhage.

Clean up the woman. Clean up the bed. Clean up everything and keep it clean. Put on a snug abdominal binder and keep it snug. Tell your

patient to turn on either side she chooses, get out of bed to empty her bowels and bladder, assume the semi-sitting posture for half an hour two or three times a day, and eat plenty of good, nourishing, easily-digested food.

I want to sound a note of warning in regard to the use of the much lauded preparation, H. M. C. in obstetrics; it is dangerous to the child to give the mother any form of opium in full doses an hour or so before delivery. I have as little use for H. M. C. in obstetrics as I have for the bunch of commercial sharps who exploited it.

These rambling remarks are not intended to be taken as an ironclad rule to go by; every case is a law unto itself, the successful obstetrician is alert, resourceful, able to adapt himself to surrounding conditions and circumstances, seize opportunities, and cope with any emergency that arises. Hichita, Oklahoma, September 10th, 1911.

THE PREVENTION OF POST-OPERATIVE PAIN AND SHOCK.

Leigh F. Watson, M. D., Oklahoma City.

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Following the teachings of Wyeth, Bodine, Wells and others, the importance of gentleness in operating with careful handling of tissues and nerves has become generally recognized.

In the domain of cerebral surgery these principles have been elaborated and developed to a high degree by Cushing.

While we are very careful to leave nothing undone that will promote post operative comfort and hasten the convalescence of our laparotomy patients, we often lose sight of the fact that much of the pain is unnecessary and should have been prevented and convalescence shortened.

Next in importance to the selection of the proper anesthetic is the adoption of a technic that will assure the patient the greatest degree of safety and post operative comfort.

Because it is impossible to eliminate the occasional unpleasant sequelae and the danger to life of general anesthesia in the aged and those of low resistance from disease, local anesthesia is to be recommended for the majority of operations in surgery.

Patients operated on under local anesthesia invariably suffer less post operative discomfort than similar cases receiving general narcosis.

The local anesthesia patient also suffers less frequently from flatulence because the operation is performed with less trauma to the visceral peritoneum.

Reclus states that twenty-five per cent. of the patients in the hospitals of Paris that received local anesthesia slept the first night following operation while only seventeen per cent of those anesthetized with chloroform slept the first night.

The local anesthesia practically disappears within one to two hours so it cannot be due to a latent effect of the cocaine, usually one-fourth to one grain is all that is required for the most difficult operation and as this is ordinarily distributed over a period of one to two hours the sensibility is often present soon after the completion of the operation.

It is probable that the gentler handling of the tissues in Reclus' cocaine anesthesia cases was largely responsible for the comfort of these patients.

Workers in the field of local anesthesia have confirmed the observations

of Lennander that the skin, nerve trunks, periosteum and parietal peritoneum are highly sensitive to pain and blood vessels slightly sensitive; while the abdominal, thoracic and pelvic viscerae, bone substance, bone marrow, cartilages and tendons are insensitive to heat, cold, pain and pressure both in health and disease.

Experience has taught the local anesthesia operator to always handle the sensitive areas with gentleness and avoid all unnecessary dissection and swabbing of the tissues.

The importance of careful retraction is very often overlooked. Under local anesthesia the patient will tell you when the traction is too strong. The disregard of this precaution with excessive bruising and destruction of the delicate muscular and epithelial cells under general narcosis undoubtedly accounts for the occasional failure to secure primary union.

Bodine was one of the first surgeons to emphasize the importance of handling tissues with thumb forceps to minimize trauma and thereby lessen the liability to infection.

Patients operated on under local anesthesia state that sharp dissection is painless, while blunt dissection with its extensive trauma is extremely painful.

When the local anesthesia technique is applied to operations under general narcosis the patient suffers less pain, convalescence is more comfortable and primary union more frequent.

The division of nerve trunks with or without general anesthesia is attended with shock while the same nerve cocaineized can be severed without the slightest degree of shock.

The infliction of trauma on all structures containing nerve filaments produces shock, the degree depending upon the severity of the trauma, size and number of nerves involved.

When operating under local anesthesia undue traction or the slipping of retractors in contact with parietal peritoneum produces pain. The same retractor held still and without excessive traction will not cause the slightest discomfort.

The inclusion of nerves in suturing will often cause pain in wounds that heal by primary union, the pain usually persists with varying intensity until the absorption of the suture or degeneration of the nerve.

The preservation of the nerve trunks of the anterior abdominal wall lessens the occurrence of hernia following laparotomy. Recently it has been demonstrated that nerve preservation plays an important part in securing primary union and the prevention of suppuration.

The posterior parietal peritoneum is only slightly sensitive to pain as compared to the anterior parietal peritoneum which is acutely sensitive.

After opening the abdomen and cocaineizing the anterior parietal peritoneum I have palpated the uterus, ovaries and tubes and rubbed the posterior parietal peritoneum with a dry gauze sponge without causing the patient pain or discomfort.

Because of the sensibility of the anterior parietal peritoneum to pain and the epigastric discomfort that follows traction on the mesenteries surgeons employing local anesthesia avoid all unnecessary handling of the intestines and omit the use of abdominal pads whenever possible.

No matter how carefully the pads are placed in contact with the intestines they invariably produce a certain amount of trauma, the degree of which is shown by the increased redness of the serosa.

The post operative pain following laparotomy is proportional to the handling and trauma of the abdominal viscera.

Unless contraindicated, the use of the extreme Trendelenberg position is advocated. This obviates the necessity of employing gauze pads to force the intestines out of the field of operation.

If the use of pads is essential they should be wrung out of hot normal saline solution and care exercised that they do not rub or irritate the peritoneum when introduced or removed.

When the use of abdominal pads is necessary the intestines should first be pushed well back from the field of operation with a rubber tipped intestinal forceps.

The pad should be placed so that it will be in contact with the smallest possible amount of visceral and parietal peritoneum, avoiding irritation of the delicate serosa as much as possible. Pads should not ordinarily be used unless pus is present.

The most logical solution of the skin sterilization problem is to completely exclude it from the operative field.

As soon as the skin is incised, a towel is placed on each side of the incision and held in contact with the skin edges by a skin clip at the upper and lower extremity of the wound.

The skin edges of the incision are covered with moist gauze compresses before the muscles are incised and the peritoneum opened.

Blood clots forming during the opening or closure of the abdomen and in operations on the head are best removed by allowing saline solution to drip from a saturated gauze sponge until the clot floats out of the wound. In head surgery Cushing advocates the use of cotton instead of gauze for sponging.

EDITORIAL

TRACHOMA AND OUR PUBLIC CHARGES.

The physical inspection and investigation of the inmates of our state institutions now being conducted by the State Commissioner of Health has revealed a rather remarkable condition of affairs; one not warranted by present day knowledge of the infectiousness and danger of certain diseases; especially is this true of trachoma.

At Pryor a very large percentage were infected and the danger of such infection in an orphan home should only be known to at once cause some steps to be taken for its control.

Dr. Daniel W. White, the trachoma expert of the United States Indian Service, has stated that 48 per cent of the school children of Pawnee were effected by trachoma and this statement, if true, excuses in some measure the condition in our state schools, does not excuse it either, but warrants it by contrast.

He found in his investigations that 50 to 80 per cent of the Indian inmates of the different schools were affected in some degree with the disease and that forty out of seventy negro children had trachoma; this statement he considered as being significant from the fact that it is held by some authorities that the negro race is practically immune to trachoma.

At all events the condition confronts us and should be immediately met in order to limit to the smallest degree the damage liable to follow an untreated and unchecked disease of this character and some effort should be made to have a systematic course of preventative action taken to correct the evil. To the ignorant and careless layman "sore eyes" do not amount to much, probably he had them and then his father before him and to such people an effort to control the trouble seems misplaced, but it is to just this class of people as a rule the effort for control and eradication must be directed.

The report of the investigations will probably cause some concerted action to be taken by the authorities in this matter.

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CITY HOSPITAL VERSUS PUBLIC LIBRARY.

The report of the City Commissioners of Muskogee for the month of August, published October 19th, shows that approximately \$1,400.00 was expended for various purpose for support of the City hospital and that more

than \$700.00 or a little more than one-half of the hospital expense was required to operate the City Library. It was also noted in medical circles of the city about this time that there was considerable criticism of the hospital for alleged extravagance and it was said that the Mayor had announced that unless the hospital could pay expenses it would be closed so far as the city was concerned.

Well, this is at least an aggravating condition; nothing said about closing a library, which is known throughout the financial world as a heavy dividend payer, but the hospital which collected during this time approximately its own running expenses besides treating and caring for the city's patients to the extent of \$1,100.00 is threatened with disaster because of the heavy drain it makes on the public treasury.

It is not explained just how a monthly expense of \$700.00 for the library is calmly looked upon as being the proper thing and a small deficit in the hospital budget becomes a matter of so much worry; it is true that the amounts allowed by the Excise Board for operating expenses of the different departments, were in some instances, utterly inadequate to meet the actual needs of the situation, while comparatively, if economy was the object, the amount set aside for the library was entirely too much and out of proportion to the amounts set aside for other purposes.

Criticisms of this character are certainly out of place, not warranted by an investigation of the true conditions, and, if made in good faith after an investigation of conditions, cannot possibly be considered as anything but narrowness and partiality.

PERSONAL AND GENERAL NEWS

Dr. D. Armstrong, Secretary of Bryan County Medical Society, spent a few weeks of October with the Mayo Brothers.

Dr. L. M. Sackett of Oklahoma City is attending the New York Polyclinic. He will be away from the state three months.

Dr. A. W. White, Oklahoma City, spent a part of October in the Chicago Clinics.

It is announced that Dr. C. J. Fishman has been appointed to succeed Dr. C. E. Lee in the Department of Pathology of the State School of Medicine and Dr. Edward F. Davis assumes the position occupied by Drs. L. Haynes Buxton and H. Coulter Todd in the Eye, Ear, Nose and Throat Department.

The State School of Medicine have closed an arrangement by which they secure control of the Rolater Hospital for a term of years. The hospital is now being enlarged to accommodate the added calls on its capacity and will be fully equipped by January first.

The Ardmore Sanitarium, a new institution, made its debut under the auspices of the Carter County Medical Society October 10th. This institution starts out under most favorable circumstances and has the good wishes not only of the local profession, but of the state wide profession as well.

The private sanitarium of Dr. John W. Duke, Guthrie, has moved into new and larger quarters, indicative of an increasing prosperity and success. The patronage of this institution has steadily increased during the last few years and the recent move will be a matter of congratulation to its many friends.

The Gainesville Sanitarium held its graduating exercises for the School for Nurses Tuesday evening, October 10th. The graduates were Misses Annie Perkins, Rose Cross and Sophie Brogan.

The State Board of Medical Examiners, after a hearing during the Muskogee meeting, revoked the license of Dr. S. K. Williams of Muskogee for unprofessional conduct in performing a criminal operation. A similar charge was made against Dr. Williams just prior to and after statehood in an attempt to refuse him re-registration, but the charges were found to be inoperative on legal and technical grounds and the merits were not investigated.

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THE MEDICAL ASSOCIATION OF THE SOUTHWEST.

The sixth annual meeting of this association was held in Oklahoma City October 10-12.

From a scientific standpoint the meeting was one of the most successful yet held, surpassing by far in interest and quality of its productions any so far held. The attendance was far short of what should be in a meeting of the high class this is, and this is a matter of general regret, for no one in reach should miss these sessions or can miss them without being loser thereby.

The preliminary meeting was called to order by the President, Dr. L. M. Perry of Parsons, Kansas, and after the transaction of necessary business met in general session at the Masonic Temple, this meeting was called to order by the Chairman of the Committee on Arrangements, Dr. E. S. Lain, Oklahoma City, and after the usual addresses of welcome and responses the President delivered an annual address on the "Management of the Nervous Child."

Among the papers read at the meeting were the following:

Ulcer of the Stomach and Duodenum, Dr. C. B. Hardin, Kansas City.

Surgery of the Gall Bladder and Ducts in Relation to Chronic Pancreatitis, A. L. Blesh, Oklahoma City.

Ocular Complications in Hysteria, L. Haynes Buxton, Oklahoma City.

Do You Do Your Duty in the Obstetrical Chamber- D. A. Myers, Lawton.

The Uses and Abuses of the Stomach Pump as a Therapeutic Agent, W. A. Woods, Hubbard, Texas.

Arterio Sclerosis, E. W. Boardman, Parsons, Kansas.

Report of a Case Relieved by Intestinal Puneture, Leroy Long, McAlester. Topeka.

The Therapy of Digitalis, Chas. W. Fisk, Kingfisher.

Recent Advances in the Diagnosis and Treatment of Syphilis, Wm. Frick, Kansas City.

Retro-Cecal Appendicitis, J. N. Jackson, Kansas City.

Intestinal Stasis, J. F. Binnie, Kansas City.

Incisions, John G. Sheldon, Kansas City.

Detached Retina, Its Surgical Treatment, G. W. Maser, Parsons.

Glaucoma, Edward H. Carey, Dallas.

The Conjunctival Flap, the Indications and Methods, R. H. T. Mann.

Deformities of the Nasal Septum and Their Treatment, D. D. McHenry, Oklahoma City.

Trifacial Reflexes, A. H. Andrews, Chicago.

Pellagra, R. M. Grimm, Assistant Surgeon, U. S. M. H. S.

High Frequency Current in Chronic Urethral Affections, W. T. Wootan, Hot Springs.

What Shall We Do to Be Saved, A. B. Leeds, Chickasha.

The Larger Art of the General Practitioner, A. S. Risser, Blackwell.
Bromo-Delirium, S. Grover Burnett, Kansas City.

Report of a Case Relieved by intestinal Puncture, Leroy Long, McAlester.
Abdominal Drainage, Chas. Blickensderfer, Shawnee.

Significance of Pain in the Upper Abdomen, A. W. McArthur, Kansas City.

Practice of Surgery in Mexico and United States, L. H. Huffman, Hobart.
Total or Subtotal Hysterectomy, H. C. Crowell, Kansas City.

My Method of Treating Uterine Displacements, Frances A. Harper, Pittsburg, Kansas.

Inguinal Hernia, A. C. Scott, Temple, Texas.

The Treatment of Trachoma, H. Moulton, Ft. Smith, Ark.

Dacryo-Cystitis and the Tear Sac Operation, Edward F. Davis, Oklahoma City.

Hypopion Ulcer from Disease of the Tear Sac, J. H. Barnes, Enid.

Pellagra, a Clinic by Leila H. Andrews, Oklahoma City.

Treatment of Pellagra, E. H. Martin, Hot Springs.

Dermatological Phases of Pellagra, E. S. Lain, Oklahoma City.

An Interesting Case of Cerebro-Spinal Meningitis, W. L. Allison, Ft. Worth.

Osteomyelitis, J. E. Oldham, Wichita.

Treatment of Sequellae of Polimyelitis, J. D. Griffith, Kansas City.

Cancer and Its Treatment, W. L. Kendall, Enid.

Septic Infection, W. J. Jolly, Oklahoma City.

Differential Diagnosis of Disease Causing Gastric Disturbances, W. E. Dicken, Oklahoma City.

Postoperative Tonsillar Hemorrhage, J. E. Sawtelle, Kansas City.

Tonsillar Adenoids, D. L. Shumate, Kansas City.

The following Nominating Committee was elected:

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Jarrett.

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The visiting ladies were most agreeably entertained by the ladies of Oklahoma City under the chairmanship of Dr. Leila H. Andrews, their entertainment comprising banquets, automobile rides, luncheon at the Country Club and the theatre.

The general banquet was held in the Skirvin Hotel and the toasts and feasting was in keeping with the other phases of the meeting.

The financial report of the secretary shows the organization in good condition. Hot Springs was selected as the meeting place for 1912.

THE CHOICE OF AN ANTITOXIN.

No therapeutic agent which the physician uses today needs to be selected with greater care than the serums. These products must not only be individually specific, produced from specific germs or their toxins, but they must be pure—elaborated in the blood of perfectly healthy animals. The preparation of prophylactic and curative serums should never be intrusted to the inexperienced or to those who are hampered by lack of facilities. In choosing an antitoxin the practitioner should consider only serums of known reliability—products into which no element of conjecture enters. His own interests and those of his patient demand this.

With reference to diphtheria antitoxin it is noted that Parke, Davis & Co., in their current announcements to the medical profession, feature both the "serum," which they have produced unchanged for many years, and the newer "globulins," the two products being presented apparently upon even terms, without favor or prejudice to either. In explanation of this the manufacturers point to a division of sentiment on the part of practitioners, some of whom indicate a preference for the older serum, while others favor the globulins. In point of efficiency the two products stand upon an equal footing, each being of definite antitoxic strength. Having no desire to influence the judgment of physicians, and in line with their well-established policy to meet the wants of the profession, Parke, Davis & Co. announce that they will continue to furnish both.

BOOK REVIEWS

DISEASES OF INFANTS AND CHILDREN

The New (3rd) Edition, Revised.

A Manual of Diseases of Infants and Children, by John Rabrah, M. D., Clinical Professor of Diseases of Children, College of Physicians and Surgeons, Baltimore. Third Revised Edition. 12mo volume of 534 pages, fully illustrated. Philadelphia and London: W. B. SAUNDERS COMPANY, 1911. Flexible leather, \$2.50 net.

In this work the author has endeavored to condense his subject into a small and readily accessible volume and has succeeded admirably in arranging it along these lines. The size makes it of great convenience to the general practitioner and student and the text arrangement and illustrations are aaid in hand; the illustrations are very good and there are enough to make the subjects thoroughly understood.

A work of this character is necessarily limited, but in condensing it nothing pertinent is omitted and the reader will find it most valuable as a ready and reliable reference on the subject of children's diseases.

Among its noticeable features are chapters on examination of sick children, which chapter is thorough and complete, several chapters illustrated in color on the contagious and infectious diseases and a good exposition on the therapeutics of infants and children which contains a table of dosage for infants.

A TEXT-BOOK OF MEDICAL DIAGNOSIS.

A Text-Book of Medical Diagnosis. By James M. Anders, M. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, and Napoleon Boston, M. D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1195 pages, with 443 illustrations, 17 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

This valuable work is the result of solicitation on the part of the many professional friends and students of the authors to prepare a work on medical diagnosis conforming to the ideas and teachings as advanced by them.

As such it goes into very minute detail, but not to the extent of making the work ponderous and unwieldy.

The work is well illustrated and contains many charts, diagrams and a considerable number of plates in color.

The differentiation of disease is ably entered into, much space is devoted to general considerations of diagnosis, the application of blood pressure determining instruments and the results of the findings is given.

More space is given, as would be expected in such a work, to the diseases of the nervous system and this portion is finely illustrated to accompany the text. One class of the illustrations bearing on the consideration of nervous diseases is a series of plates of the moving picture type, showing the posture of the patient in the different movements of locomotion—this being a unique phase of book-making.

The work may be said to be the most valuable of its class lately brought out and deserves the consideration of the profession.

THE PARASITIC AMOEBAE OF MAN. By Charles F. Craig, M. D. Captain, Medical Corps, United States Army. From the Bacteriological Laboratory of the Army Medical School, Washington, D. C., and the Rockefeller Institute for Medical Research, New York City. Published with the authority of the Surgeon General of United States Army. Illustrated, 253 pages. Cloth, \$2.50 net. Philadelphia and London. J. B. Lippincott Company, 1911.

There is perhaps no subject as little understood in the temperate regions of the United States, or for that matter in our southern states as Amoebic Infections of Man. While necessarily largely confined to the tropics the infections due to amoebae are not always so confined and the scarcity of the literature on the subject makes this work welcome to the profession and doubly so to the physician of the southern states and the tropics.

This work is historical and then takes up the morphology of the amoebae, devoting space to the technique and study of the different forms. Most of the work is given over to the amoebae of the intestinal tract and the subjects are well illustrated. It will, of course, be found most valuable to the student and investigator of bacteriological subjects and should find a permanent place in the laboratory as a work of reference.

INTERNATIONAL CLINICS. VOLUME THREE. NINETEENTH SERIES. Edited by Henry W. Cattell, A. M., M. D., Philadelphia, U. S. A. Cloth, 304 pages, illustrated. Price, \$2.50 net. Philadelphia and London, J. B. Lippincott Company, 1911.

This series of publications is too well known to require description or comment, and this volume maintains the high standard of excellence of its predecessors.

Among other good contributions is to be noted one on The Operative Treatment of Recent Fractures of Long Bones, by Thos. W. Huntington, Professor of Clinical Surgery, University of California, San Francisco, The

Surgical Treatment of Disabilities, Following Anterior Poliomyelitis, by E. H. Bradford, Boston, both of which are well illustrated.

Under the head of Economics of Medicine is noted a most sensible article entitled, The Successful Practice of Medicine, by Thomas F. Reilly, M. D., New York City. A study of this will do all physicians good, but should especially appeal to the beginner in medicine and surgery.

MANUAL OF DISEASES OF THE EYE FOR STUDENTS AND GENERAL PRACTITIONERS. By Charles H. May, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903. Attending Ophthalmic Surgeon to the Mount Sinai Hospital, to the French Hospital, to the Red Cross Hospital and to the Italian Hospital, New York.

Seventh Edition, revised, with 362 original illustrations, including 22 plates, with 62 colored figures. Cloth, \$2.00 net. New York, William Wood & Company, 1911.

This work occupies the high plane of one justifying a translation into the German, Italian, French, Dutch, Spanish, and Japanese, with a British edition, many of the translations having exhausted several editions and reprints.

An inspection of the work reveals the answer to its popularity. It is well up to date and the illustrations are of high class, the colored plates are beautiful and the work appeals at once to the practitioner and student of eye affections. It is especially useful to the busy man as a work of reference, the subjects being so arranged as to make them easily reached.

THE PRACTICAL MEDICINE SERIES. Edited by Gustavus P. Head, M. D., and Charles L. Mix, A. M., M. D.

VOLUME VI. GENERAL MEDICINE. Edited by Frank Billings, M. S., M. D., head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A. M., M. D., Professor of Medicine, Chicago Clinical School. Cloth, 353 pages. Price, \$1.50.

VOLUME VII. PEDIATRICS. Edited by Isaac A. Abt, M. D., Professor of Pediatrics, Northwestern University Medical School. Attending physician Michael Reese Hospital, with the collaboration of May Michael, M. D.

ORTHOPEDIC SURGERY. Edited by John Ridlon, A. M., M. D., Professor of Orthopedic Surgery, Rush Medical College, with the collaboration of Charles A. Parker, M. D. Cloth, 237 pages. Price, \$1.25. Series, 1911, Chicago, The Year Book Publishers, 180 N. Dearborn street.

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THE JOURNAL

of the



Oklahoma State Medical Association.

VOL. IV

MUSKOGEE, OKLAHOMA, DECEMBER, 1911

No. 7

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Entered at the Postoffice at Muskogee, Oklahoma, as Second Class Mail Matter, July 28, 1910.

This is the Official Journal of the Oklahoma Medical Association. All communications should be addressed to the Journal of the Oklahoma State Medical Assn., English Block, Muskogee, Oklahoma.

THE PRESENT KNOWLEDGE OF EPIDEMIC POLIOMYELITIS.

Antonio D. Young, M. D., Oklahoma City, Oklahoma.

It is probable the virus of epidemic poliomyelitis has never been seen; but that there is a specific micro-organism causing this disease seems to have been proved by the experiments of Flexner and others. This virus readily passes through the finest filter and most likely is too small to be discerned by our present microscopic mechanism.

Flexner's experimental researches upon the monkey, the only animal except man, to which the disease has been transmitted, seems to establish its contagiousness and the most common place of entry and exit of the virus is the naso-pharyngeal mucous membrane. This is owing to the peculiar arrangement of the lymphatics which furnish a direct route between the naso-pharyngeal cavity and the leptomeninges.

Flexner has shown conclusively that flies fed upon the spinal cord of monkeys that have died as the result of epidemic poliomyelitis, and introduced intra-cerebrally, are capable of producing the disease in other monkeys. It is reasonable to assume that this will hold true for man.

It will be noticed that throughout this article, the disease is spoken of

as epidemic poliomyelitis. This is because there are probably a number of pathogenic bacteria giving rise to the clinical and pathological phenomena of infantile paralysis, just as we have the epidemic form of meningitis due to the diplo-coccus intercellularis and many varieties due to other micro-organisms.

The pathological changes presented by infantile paralysis are gross lesions visible to the naked eye and minute lesions discernable only to the microscope. The gross lesions are congestion and hemorrhage into the gray matter of the cord and are no proper measure of the damage inflicted by the virus.

The microscopic lesions (Flexner, Journal A. M. A. Vol. LV 1105) are more severe and widespread in the spinal cord than in the brain and more pronounced in the gray matter and membranes of the cord than in the white matter. No part of the spinal cord, including the medulla, is entirely free from lesions, but the severest lesions tend to occur at levels corresponding to the groups of muscles most severely paralyzed. The meninges show more or less diffuse infiltration with round cells, the greatest accumulations of which are about the blood vessels where thick collars of cells often exist. The infiltration is within the adventitial coat, while the muscular coat and the intima remain intact, although the lumina of the vessels are often encroached on through compression. When the vessels are small the effect on the lumina, and hence on the permeability, are considerable. Meningeal cellular invasion is always interstitial and does not give rise to exudate on the surface of the cord or brain, and it is, moreover, made up almost exclusively of mononuclear cells.

The gray matter of the cord shows lesions of the anterior and posterior horns and the commissure, but the anterior horns are as a rule more severely and widely injured than the posterior horns. The chief lesions surround the vessels and consist of a cellular infiltration and edema of the perivascular spaces, and sometimes of hemorrhages as well. When the nerve cells and ground substance are injured, as is frequently the case foci of similar cells occur there, and the nerve cells show degeneration and necrosis. The extent of the lesions in the gray matter varies greatly. Sometimes minute foci of injury and sometimes complete degeneration of the anterior horns occur. The infiltration of the perivascular sheaths of the vessels is continuous with that of the pia-arachnoid. The white matter of the cord holds in respect to the frequency and severity of the affection an inferior position and the lesions when present there consist of edema, perivascular cellular infiltration, hemorrhage and necrosis of tissue. The brain shows lesions that are, however, more sparse than in the spinal cord. They correspond with cellular infiltrations of the meninges similar to but less in amount than in the cord. The intervertebral ganglia regularly are the seat of a diffuse and nodular infiltration with lymphocytic cells, which collect between the nerve cells and about the nerve fibres, both of which may be the seat of degeneration or of necrosis.

The pathogenesis of the affection is explained by the nature and distribution of the lesions. It would appear that the virus becomes implanted on the leptomeninges, especially in the region of the spinal cord and medulla, where it sets up cellular infiltrative changes that are most marked in the perivascular lymph spaces of the arteries entering the nerve tissues. The vascular lesions constitute the primary causes of the lesions of the nervous tissue, the severity of which is determined by the particular vessels affected and the intensity of the involvement. The infiltrative lesions are confined to the perivascular lymph sheath and adventitia, but still other lesions must occur in the intima of the vessels from which the edema and hemorrhages arise. The central arteries entering the anterior median fissure and supplying the anterior gray matter of the cord invariably become affected through which the preponderance of lesions of the anterior horns is accounted for. Since the arteries supplying the posterior gray matter are less important, the lesions in the posterior cornua are slighter. The degree, therefore, of affection is determined by the richness of the arterial blood supply whence is explained the liability of the lumbar and cervical enlargements to severe lesions. Irregularity in the branching of the central artery probably explains the common variations observed in the involvement of the two lateral halves of the body. The brain is far less commonly the seat of lesions, but it is not spared. Paralysis of the cranial nerves, and especially of the facial nerve, follows on them, but the lesions also occur in parts of the brain which do not respond by paralysis. The brain injuries, like those of the cord, depend on vascular lesions.

Hence it would appear that there are good grounds for believing that a considerable part of the paralysis, especially those that are not permanent, are the effects of temporary vascular impediments. The impediments are all outside the lumina of the vessels, which are merely reduced in caliber through pressure. Thrombi do not occur. Some of the functional disturbances are possibly thus anemic in origin; others are probably caused by slight degenerations, and still others are undoubtedly caused by focal hemorrhages and edema. All these effects may possibly be recovered from: part by resolution of the cellular vascular infiltrate and re-establishment of the lumen; part by absorption of edema and hemorrhage, and part by restoration of the mildly degenerated nerve cells. The severer degenerative and other lesions through which actual necrosis is produced, do not become restored. On them depend the permanent paralysis and deformity.

Jelliffe quotes Wickman (*Journal A. M. A.* Vol. LVI No. 25) who recognizes "At least eight fairly definite types of the disease." They are as follows:

1. The Spinal or Poliomyelitic Form. This is the usual type with its rich and varied symptomatology.
2. The acute Ascending or Descending Types. These correspond to the

Landry paralysis type, also seen in some hydrophobias and certain neuritides, and which are usually, though not invariably, fatal.

3. The Bulbar or Pontine Forms. In these the bulbar or pontine nuclei are most prominently affected. Here belong many central facial palsies, isolated eye palsies, palsies of the larynx and pharynx. Many of the fatal cases are such because of the medullary involvements. Medin and Oppenheim, respectively, have studied the bulbar and pontine forms.

4. The Encephalitis Form. Strumpell has studied this type in particular. While apparently rare in the New York epidemic, nevertheless it occurred.

5. The Ataxic Form. This is usually a predominantly cerebellar type, and has been seen in only a few instances.

6. Neuritic or Neuritis-Like Form. This is an admittedly difficult type to diagnose, but inasmuch as neuritis is usually rare in children—excepting diphtheria—its occurrence at the time of an epidemic should throw light on the diagnosis.

7. The Meningeal Form.

8. The Abortive Form. Wickman roughly estimates that those constitute 15 to 20 per cent of all the cases, and Muller regards them as occurring more frequently than all the other forms. If Muller's position be true, we have an intensely practical problem before us. It will be imperative for us to devise rapid and accurate methods of diagnosis of these abortive cases if an epidemic is in progress, and prophylactic measures must be put in operation to prevent the spread of the disease through these abortive cases. That they can be the direct means for the communication of the disease has been abundantly proved by most modern students of the disorder, more particularly by Wickman and by Muller.

In his experimental studies Flexner observed an incubation period of from three to thirty-three days. He says: "The prodromal symptoms consist of a state of undue nervousness and excitability on the part of the inoculated monkeys, or inability to fix the gaze, with which is associated a wrinkle and mobile rather than smooth and placid cast of countenance, and an erection of hairs over the body. These symptoms are most marked for a period of from six to eight hours before the onset of the paralysis. We have not noted any constant elevation of temperature or gastro-intestinal disturbance. The onset of paralysis either when the prodromal symptoms have occurred, or when they have been absent or undetected, tends to be sudden. The paralysis affecting any of the larger groups of voluntary muscles tends to be accompanied with other weak or partially paralyzed groups of muscles. In certain animals the medulla was first affected, and in them death sometimes occurred before the development of actual paralysis. In respect to location, the lower and upper extremities were affected oftener than the muscles of the trunk and the spinal paralysis were much more frequent than the cerebral. Sensory disturbances occurred, but their investigation

was much less satisfactory than the investigation of the motor disturbances. In other words, there is a striking similarity between the frank examples of epidemic poliomyelitis, whether occurring spontaneously in man or produced experimentally in monkeys. A further correspondence exists in this: Slight and evanescent or abortive attacks of the disease have been described in human beings, cases the nature of which would not be suspected were it not for the fact that they occur during the prevalence of epidemics of frank paralysis; and similar abortive or evanescent attacks have been noted among inoculated monkeys, but rarely."

The symptoms of the other types are indicated by their titles and unless an epidemic be present are usually not diagnosed until late in the attack. Jelliffe says, "The chief signs in the meningeal forms vary, in their initial stages, from those of the spinal type, only in the matter of greater severity. There is a headache, nausea and vomiting, slight photophobia with hyperaesthesia: pains in the neck and back, stiffness of the neck, rigidity of the muscles of the vertebral column, opisthotonos of milder or severe grade, Kernig's sign, tonic or clonic convulsive movements; somnolence and even unconsciousness. The temperature runs a non-characteristic course.

"While in the ordinary spinal type the disease develops in classical fashion, in the meningitic form it may recede rapidly, and beyond the possible occurrence of transitory or permanent eye palsies nothing remains. In some cases death ensues with the development of stormy symptoms."

"In the Vienna epidemic of 1908-1909, Spieler observed at least eight meningeal forms in a series of forty-four cases; in four of these the picture resembled tuberculous meningitis so very closely as to be diagnosed only late in the disease. Spieler describes some of his cases in a very characteristic manner. The cases very frequently have a comparatively lengthy prodromal period, with beginning change in mood, fatigue, nightly unrest with frequent outcries, occasional vomiting with obstipation, suggestive of a beginning basilar meningitis. Then, in children, convulsions suddenly occur, marked stiffness of the neck, irregular pulse, Kernig's sign, increased patellar reflexes which usually diminish later, facial pareses, strabismus, general hyperesthesia, vasomotor disturbances and atypical facies cerebialis. At this period the lumbar puncture will show lymphocytosis, but no purulent exudate. In the favorable cases the symptoms then begin to recede, the temperature falls to normal, the irritative phenomena diminish, and there may develop a number of the palsies characteristic of the spinal form.

From an examination of the cerebro spinal fluid, Flexner thinks it possible to make a diagnosis of poliomyelitis before the appearance of paralysis or signs of meningeal irritation. At the expiration of twenty-four hours to seventy-two hours from the time of the inoculation of the monkey, the number of the cells within the fluid progressively increases as to give rise to a slight opalescence of the fluid which becomes also subject to spontaneous coagulation. The fluid also contains an excess of protein as shown

by Noguchi's butyric acid test. These abnormal conditions disappear by the time the paralysis has appeared.

When infantile paralysis is suspected the cerebro-spinal fluid should be examined.

Thus far all efforts to produce a serum, therapeutically successful have been unavailing. Until such a serum has been produced, it is probable no specific will be available.

While Flexner was unable to influence the disease in monkeys, by the administration of Urotropin, he did seem to postpone the onset of paralysis by giving it before the inoculation of the monkey by the virus. Hence aside from any symptomatic remedies indicated, Urotropin should be given in large doses.

MEDICAL INSPECTION IN PUBLIC SCHOOLS, ITS NEEDS AND DESIRABILITIES.

By Dr. A. B. Montgomery, Muskogee, Oklahoma.

In 1803 to 1812, John Ware of Chelsea, England, called attention to the relation between eyesight and educational pursuits. In 1886 Cohn of Breslau, a Prussian Army Surgeon, published his famous report upon the eyesight of 10,000 school children. Medical inspection of schools was advocated in 1867 by Virchow. Later Cohn himself drew up a scheme of duties for school physicians, which was first considered at the International Congress of Hygiene at Geneva in 1883. In 1875 Prof. Bowditch recorded the measurement of height and weight of 25,000 school children in Boston. In 1882 Hertel of Copenhagen as a member of the Danish Commission reported that of 16,000 children examined in both primary and secondary schools, 29 per cent were unhealthy. In 1884 a Royal Swedish Commission was appointed to investigate health conditions in schools. On their behalf Prof. Axel Key examined 18,000 children in several countries and published a report upon the growth and development of boys and girls at different age periods. He also like Hertel discovered that a large proportion approximately 35 per cent of children were suffering from chronic physical defects, such as anemia, headache and short-sight. In 1885 Dr. Francis Warner of London, first directed his attention to the examination of school children with special reference to their mental status. In 1891, a medical officer was appointed for the School Board for London, and two years later, Dr. James Kerr was appointed at Bradford, ostensibly for the purpose of examining absentees from school who were alleged to be suffering from disease, but who did not furnish a doctor's certificate. Dr. Kerr was the pioneer of all official routine in connection with medical inspection in the elementary schools of England. He appears to have been the first medical man to enter the schools daily in the role of the school doctor and to study all problems of school hygiene working in conjunction with the teachers in the interest of the children. In Leipzig, local school doctors had been appointed two years previous but apparently they acted in the capacity of specialists for the eye or ears rather than for general purposes. In 1893, England enacted the blind and deaf act, which was the first authoritative advance providing for the appointment of medical officers for schools. In 1899, she passed an act relating to defective and epileptic children. As late as May 1903, the chief matters coming under the notice of the medical officers of the School Board for London, had been: First, notification by teachers and control by individual exclusion, class or school closure in cases of infectious diseases. Second, Examination of teachers, candidates or employees in regard to health. Very little has been attempted as regards (a) School and medical

matters in the hygienic bearing (b) physical conditions of children, measurements, nutrition, vision, hearing. (c) Conditions of school—ventilation, heating, lighting, furniture.

In the United States of America, the chief aim of medical inspection so far, has been directed towards the prevention of infection and contagious diseases. Much useful work has been done in this direction by various municipalities, but very little has been attempted with regard to the real problems of school hygiene, except in Boston, where a Director of School Hygiene was appointed as early as 1891. In the following year medical inspectors were first appointed. Next, the problem of school sanitation was considered, then came the physical conditions of all school children, followed by scientific study of child life and the problems of school hygiene. Now a fully staffed special department of school hygiene has been established with a director and three assistants, play ground teachers, nurses and a medical inspector of special classes. Legislation as to medical inspection exists in only four states. In 1906, a mandatory law was passed in Massachusetts, which made provision, First, for the detention of contagious diseases in schools. Second, for the annual examination of children by physicians for all non-contagious physical defects and teachers for defect of eyesight and of hearing.

Fundamentally, the state control of health inspection depends upon the fact that a large proportion of children attending public schools are suffering from preventable and remediable diseases. It matters not for the moment to what extent the home is responsible nor how far the diseases are aggravated by school life; it is sufficient that the defects are unrecognized here by the teachers or parents who alone are in contact with the children, hence it is clearly a national duty to discover a system by which these preventable and remediable defects may be brought to light, seeing that the children are collected together during several years of their life in public schools for the purpose of education, it becomes a matter of convenience to delegate the Nation's responsibility to the educational department. Every school contains a percentage of children suffering from unrecognized defects. Probably more than 80 per cent have defective teeth; 20 per cent defective vision. Ten per cent are retarded in their educational progress by physical defects, such as Anemia, General Debility and Deafness, resulting from adenoid growth or discharging ears. These figures may not be exact, but the general inference is sufficiently sound. In other words, medical inspection in the elementary schools is necessary, because the parents are ignorant. It is only a means to an end, and at present the end in the education of the people. Indeed, it has been argued that it devolves upon the state at the present day to make good its defective training and education of the parents during the last 20 years or 30 years by directing a system of health inspection towards the education of parents and children alike. For if all parents had been taught the elements of healthy living and were able to recognize the presence and to realize the importance of physical

disabilities and defects in their children, systematic health inspection would theoretically be out of the question. But as matters stand today, the interference of the state is essentially justified by the large amount of preventable and remediable effects among school children. The defects are unrecognized either by teachers or parents and can only be discovered by systematic medical inspection.

Susceptibility of school children, especially those in the lower grades to such acute diseases as measles, scarlet fever, diphtheria, acute anterior, poliomyelitis, commonly called infantile paralysis, is so great that the benefits capable of being conferred upon the coming generation by the early recognition, treatment and prevention of these diseases alone is incalculable. Measles, which are commonly considered a trifling affection only too often lay the foundation for serious affections, chiefly tuberculosis. Scarlet fever, the most varied in its manifestations of any of the exanthematous diseases, in its mild form is often unrecognized, and consequently untreated with the attending increased dangers of contagion. Even the mildest forms of this disease may be followed by an acute rapidly fatal kidney affection or a chronic form entailing a life of invalidism upon its victim. A large percentage of cases of deafness and consequent partial or complete loss of speech in infancy and childhood is due to scarlet fever. Rheumatism may also occur as a complication or sequel with an accompanying incurable organic heart affection. Certain acute and chronic nervous affections of childhood and later life have their foundation in scarlet fever and the rheumatism accompanying or following it, for example, Chorea commonly known as St. Vitus dance. Infantile paralysis, about which we have heard so much in the last few years, is a matter of fact, a very old disease and references are made in the Bible to cures of it. While the organism producing this disease is not isolated, it is probably both contagious and infectious. Contagion most probably occurring through the mucous membrane of the nose and throat.

Tuberculosis is one of the acute infections most common to childhood and early adult life. Fortunately in probably a large proportion of cases which are unrecognized spontaneous recovery ensues. In 1131 autopsies on children over three years of age, Wolfstein of New York, found 185 cases of tuberculosis or 11.4 per cent. Sherman reports from Edinburgh of 1035 autopsies upon children up to 13 years, of these 431 or 38.8 per cent were tuberculous. The number of deaths due to this disease, however, by no means represents its prevalence, thus in Vienna, Von Pirquet found 90 per cent of hospital children reacting to this test. These, however, were sick children from poor families where tuberculosis is very prevalent.

In 1907, Lowman found in Cleveland, that 20 per cent of 500 school children gave evidence of infection and Rous in Paris, found 40 per cent.

In 2295 school children in New York, tuberculosis was found in 29 per cent. These figures show without a doubt that tuberculosis in childhood is common. The importance of the early recognition and isolation and spec-

ial care of tubercular children in school is obvious. From 25 to 50 per cent of school children in the first three grades are affected to a greater or less extent with adenoids or tonsilitis. Adenoids, as it is well known, produce mouth breathing, and in the growing child results in changes in facial contour and expression, imperfect occlusion of the teeth. As a result of the consequent unnatural method of breathing, the child suffers from listness and dullness of intellect. Adenoids also frequently produce temporary deafness, which may become permanent by closure of the Eustachian tube and resulting changes in the ear drum.

Dental Caries (Decayed Teeth) frequently cause absorption of septic germs and their products and in this way produces malnutrition and anemia as well as grave general septic conditions. They may also become the point of entrance for such germs as the T. B. Tetanus, possibly typhoid and many others. Every child showing evidence of deficient growth in height, weight and mental development should have a careful, painstaking physical examination, preferably by the family physician, and an effort made to determine the cause and remove it if possible. Under ideal conditions of medical school inspection whereby every child, especially in the lower grades is systematically given a thorough physical examination at least once a year and those showing any abnormality whatever reported to their parents and recommendation made that they be placed under the care and supervision of the family physician and by him referred to the proper specialist in case special treatment is indicated, would within a very few years produce a very decided result in the physical and intellectual condition of very many pupils.

Medical inspection as instituted and carried out in the Muskogee schools for a few months this year shows about the same percentage of physical defects found among other school children in the country. Our examinations were confined to the detection of diseases and abnormalities as affecting the eye, ears, nose, throat and teeth. While these investigations were only in progress a few weeks the results proved conclusively to the mind of any thinking medical man of the advisability and necessity of such inspection being made a part of the regular school regime.

"Physical and mental health in childhood" as the foundation of national stamina and puericulture and pediatric medicine are very intimately connected with the science of eugenics. The tendency of the age is towards the development of prophylactic medicine and socially prophylactic measures connected with childlife are increasingly abundant. All such measures to be successful must be supervised, managed and regulated by medical experts. Recognition of the peculiarities of childhood and of the characteristics of disease at this period, must be most widely diffused and thorough in character among physicians as well as the laity, and with the attainment of special knowledge there must be developed a greater sense of responsibility towards social childhood, a realization that special knowledge implies special obligations and that knowledge socially as individually essentially

implies leadership. It is very necessary that school boards, superintendents, principals and teachers thoroughly understand the fundamentals, desirability and necessity of medical inspection of school children. It is our desire as physicians and your duty as physicians' wives to aid in educating the public along these lines. No claim is made to originality in this paper either in the subject matter given or the practical deductions drawn from it. I have quoted liberally from current pediadic literature, especially from Hogarth's Medical Inspection of Schools, and Fordyce's Hygiene of Infancy and Childhood. Both of these works are well worth the careful perusal of all who are interested in the problems of childhood.

Read before Ladies' Auxiliary of Oklahoma State Medical Association, May 10, 1911.

TREATMENT OF COMPOUND FRACTURES AND LACERATED WOUNDS

By V. Berry, M. D., Okmulgee, Oklahoma.

Historically the modern treatment of compound fractures and lacerated wounds dates from the principles enunciated by the great Lister.

As to the practical application of those principles we are indebted to the great masters of surgery who are practicing the art today, and it is an amazing fact that there are hundreds of physicians who utterly fail to realize the importance of a proper "first aid" to these cases, and the simple proceedings necessary to carry out "first aid" dressings.

Compound fractures have long been a veritable nightmare to the average general practitioner and as well to some excellent surgeons, but I am sure a better day is dawning and is now at hand when such injuries will be treated with almost as much assurance of good functional results as a simple fracture involving the same structures. If there are those who doubt this statement, let them spend a few days at Augustana Hospital, Chicago and see the results accomplished by the renowned Ochsner Brothers. Then let him follow their methods in his own work and he will soon be convinced of the true value of antiseptic surgery, for here we must not only practice aseptic surgery but antiseptic surgery of the most efficient technique.

At the outset, I wish to say I do not practice Ochsner's technique specifically throughout, but do so in a general way. In other words, I use other means to exactly the same ends. Where he uses turpentine and green soap for scrubbing the skin, I use ether and soap, and here let me say I find results just as good with the use of common laundry soap, or Ivory soap, as with green soap. In fact, I use it regularly in the hospital and do not believe any man in the state gets primary union oftener than I do. However, as better illustrating my method of handling a compound fracture, I will give the following case history in a general way:

On a very hot day in August 1910, I was called to see a colored boy, Ell L., aged twelve years, who a few hours previous, had happened to the following peculiar accident:

He was driving two mules along the road, the mules being tied to opposite ends of a long rope, when an automobile came along and stampeded the mules. One mule ran south and the other north and the middle of the rope got wound around the boy's left humerus about three inches below the head. The rope crushed and sawed the arm in such a way as to fracture the humerus, breaking the head off and splintering the shaft, tore the muscles in two, together with a large ragged hole in the skin on the

inner anterior aspect of the arm just over the fracture and made an extensive rope burn from that point down to the middle of the biceps muscles. In fact, this burn was so severe that in five days from the date of the injury, the biceps sloughed out en mass down to the bone except the lower half and a small portion of the upper attachment. When the boy was picked up he was totally unconscious and remained so for several hours. Also a fragment of bone had fallen out of the wound on first inspection by the boy's father. When I saw him he had regained consciousness and the wound was covered with clean, absorbent cotton and common cloth. My first effort was to protect the wound from infection during transit to a permanent stopping place in the city and this was attempted by covering the wound with gauze moistened in strong iodide of mercury solution. He was at once transported to the city, anesthetized, and the arm, chest, neck, shoulder and all surrounding parts thoroughly scrubbed with soap and water, then ether, then alcohol ninety per cent, and lastly tincture of iodine. However, before any skin cleansing was commenced, I thoroughly injected the wound with several ounces of Claudiu's solution of iodine, filling every pocket, both in the soft tissues and bone. This is very important and should be done preliminary to any other cleansing for, should dirty solutions from the skin get in the wound infection is not so apt to occur.

After thoroughly cleansing the skin, which was done with the bare hands made as near sterile as possible I put on rubber gloves and henceforth the strictest possible aseptic and antiseptic technique is imperative. I now take a large sterile glass, piston syringe, one holding four ounces is suitable, with asbestos packing and inject fifty per cent alcohol into every portion of the wound, using it till all portions of the wound are absolutely free of blood clots and other debris; and of course all fragments of bone and foreign matter must be removed, and all unnecessary fragments of soft tissues clipped off and in fact, the alcohol must be used until the tissues are absolutely clean.

There must be no compromise on the dictum that the wound shall not be touched with anything but the gloved hand, sterile instruments and gauze. After assuring myself that all hemorrhage is stopped and that the wound is absolutely clean, I now again inject the entire cavity with Claudiu's iodine solution, and for temporary drainage, lay a small pledget of gauze saturated in the solution just deep enough to prevent the skin from closing and then cover the entire wound and for a wide margin beyond, with a rather heavy dressing of plain dry gauze.

In the case I am now reporting I attempted to use a reinforced plaster splint extending from the back and side of the chest down the posterior surface of the arm, but when the biceps sloughed off, infection occurred and the liquefaction of soft tissues was so intense that I removed it and simply laid the arm out on sterile pads on a firm mattress without any splints whatever, and applied a loose circular bandage with a kind of hood over the shoulder. When infection occurred from the sloughing biceps it

rapidly extended up the muscle sheaths and into the wound involving the fracture, and the purulent discharge was so intense that I could see no prospect of saving the limb. However, I said to myself that here was a chance to make a thorough test of iodine as an antiseptic, and made up my mind to take the risk. My assistant agreed that the case looked almost hopeless.

The thermometer stood at 105 F. every day and the muscles melted like wax. However, I proceeded as follows:

Injected all pockets and spaces with full strength iodine solution, and after mopping all pus away with dry gauze pads, poured the solution all over the wound and adjacent skin margins and covered over with a pad soaked in the solution. In a few days—some four or five—the infection was limited to the superficial fascia and a few minor extensions into the deeper intermuscular spaces. The fracture wound was comparatively sterile and showed healthy granulations. I repeated this process of dressing every day for about five weeks and was rewarded by splendid bony union, with considerable deformity, and after bony union took place I dissected up the ends of the biceps under an anesthetic, and by plastic maneuvers of rather doubtful utility at the time and skin grafting got an arm that is useful for almost any manual labor; and while the elbow stands at about a right angle, flexion and extension up to that point is very good. With the extensive destruction of the biceps and with consequent cicatrization we could expect very limited motion.

The treatment of extensive lacerated soft tissues is carried out along exactly the same lines, but of course is much simpler than where bony tissues are injured in addition.

My experience in the use of iodine as an antiseptic is so satisfactory that I have almost discarded every other chemical antiseptic except alcohol and soap. I verily believe that one could do a laparotomy with the skin painted thoroughly with tincture of iodine without preliminary scrubbing. However, soap and water is too cheap for such a simple technique.

I will say in conclusion: It is my belief, given a patient of average powers of resistance with a compound fracture, if the first step of "first aid" consisted in injecting the entire wound with Claudius's solution of iodine, and then proper cleansing of the wound and adjacent tissues as outlined in this paper, the mortality in such cases, would be reduced by a large percentage below what it is at present, and the saving of limbs would be increased by a still larger per cent.

DISCUSSION.

Dr. W. E. Dicken, Oklahoma City:

I got in in time to hear only something about the Tincture of Iodine. That struck me forcibly because in the last two years the Tincture of Iodine

has been my sheet anchor. My method is (especially in cases of laparotomy) to have the nurse scrub the patient's abdomen with soap and water, followed by bi-chloride, and dress with aseptic dry dressing over night before operation; and then paint the abdomen just before operating with three per cent Iodin crystals in alcohol. The reason I think it necessary to have the field of operation sterilized twelve hours or so before operation is because Iodin is more effective on a dry skin than on a wet skin. The reason it is not always effective is because doctors scrub with soap and water and then use Iodin. The skin should be dry for the Iodin to get into the pores of the skin.

Dr. Hartman, Ada, Oklahoma:

I just want to ask Dr. Dicken to state his experience in the use of Iodin in stitch abscess.

Dr. Dicken: I have never had a stitch abscess since using Iodin—a three per cent solution of Iodin crystals in alcohol. That is strong enough to kill germs but it won't blister. Have the skin dry.

Dr. Leroy Long, McAelster, Oklahoma:

In the treatment of compound fractures there are certain fundamental procedures we must not forget. The first thing, and it is one we cannot always have carried out, is the preliminary dressing. I think we can do a good deal of good by instructing men, especially is this true in the case of railroad accidents, to put on a clean dressing when the accident is first received.

The next thing is to get the wound clean. I think Dr. Berry pointed that out in an excellent manner. However, as he indicated, he does not claim results superior to men who use other means. We should get the wound clean then provide for drainage. I think in compound fractures that good drainage is important. I have been impressed with the way we clean up a wound sometimes and then stitch up to make it look pretty, and then sometimes we have sloughing, etc. We must provide for drainage.

In regard to removal of pieces of bone—I don't think it necessary in every case of compound fracture to get every particle of the bone out; I think sometimes those pieces will act as a focus for new bone to form—cells will spring up.

The most essential thing, perhaps, is to put the limb in a comfortable position.

This subject appeals to all of us and if you bear in mind to clean the wound thoroughly and provide for drainage you will get good results.

CHORIOIDITIS.

Dr. S. M. Jenkins, Enid, Oklahoma.

Inflammation of the chorioid is met with more often than any of the intraocular diseases of the eye. The object of this paper is to deal with the problems that confront us in our every day efforts to combat the attacks and inroads that disease makes upon the "Windows of the Soul." Not only are they windows to the soul, but they are the common, everyday bread-winners of those who toil for a living. It matters not whether that toil be performed by brains or brawn. The eye is the most important faculty that we possess and upon its usefulness depends the success or failure of the most earnest efforts of all those who earn their living by mental as well as physical efforts. Say what you may about brilliant efforts of the trained and active mind, and the fine skill of the artist's or sculptor's hand, all these are but naught without correct vision to guide the hand aright or make known the results and ideas of the profound and brilliant brain worker. "To see or not to see" that is the question.

"There is often as much fault in the object that is seeing as in the one that is being seen."

Intra ocular diseases are not usually very fascinating to the average oculist. Slow and tedious are the recoveries at best. Chorioiditis is characterized by diminution of vision, unaccompanied by pain or other usual manifestation of an inflammation. If not complicated by other diseases, diminution of vision and perhaps black specks before the eye is all the patient complains of. The ophthalmoscope, the only reliable means of diagnosis reveals yellowish or brown spots of varying shapes and sizes dotted about pretty well over the chorioid. Most of the spots resemble the specks made by dotting a pencil point upon paper. Occasionally a longer spot as if a short stroke had been made with a pencil. The onset is never sudden, usually very chronic. Several weeks or even months have elapsed before the patient will seek medical aid or advice. No age is exempt. We find it in the aged and it has been discovered in the newly born. Sex does not predispose, both sexes being attacked with an equal ratio. My individual observation has been that uncomplicated inflammation of the Chorioid is rare. Involvement of the iris and retina are usually present when my advice is sought. I have met with it in cases of ulcer of the cornea where my services were sought to remove something from the eye. The patient being positive that there was something in his eye for he knew when he got the foreign body in the eye. The ulcer was discovered and treated first, the chorioiditis afterwards.

The course and duration where treatment is instituted, is from eight

to twelve weeks, sometimes even longer. Chorioiditis might be confounded with floating specks in the vitreous or with scars or foreign bodies in the cornea. The ophthalmoscope is the only sure means of diagnosis. Movements of the eye rotating in different directions will reveal the location of the specks or spots whether they be on the cornea in the vitreous or on the chorioid.

ETIOLOGY: Fuchs places myopia as an important factor in exudative chorioiditis. But syphilis both acquired and hereditary are given as the most common cause. General diseases of malnutrition, such as anemia, chlorosis, scrofula, tuberculosis, etc., cause many cases and frequently no cause can be assigned; the etiology remaining obscure.

TREATMENT: Treatment must be directed against the disease which caused the trouble, but the form caused by syphilis is the most amenable to treatment, iron and other reconstructives being indicated in the cases caused by anemia. Fresh air, the rest cure and forced feeding for tubercular cases. Personally I have obtained very gratifying results, in many cases, from the use of the iodides; even in the cases where specific infection was eliminated beyond the possibility of a doubt.

DISCUSSION.

Dr. Cook: I enjoyed Dr. Jenkins' paper very much. I think I take issue with him on the first statement he made there where he made the statement that choroiditis is the most common of any eye disease. I followed Dr. Jenkins and I fail to believe this.

Dr. Wilson: The fact of the matter it took me a long time to tell the difference in hyalitis and choroiditis. In cases which I used to think was possible choroiditis, I have since decided were cases of hyalitis. I believe that syphilis is a frequent cause of those cases of choroiditis troubles.

Dr. Ferguson: I want to make one remark on this paper; that is with reference to Fuchs. But he speaks of myopia; now I spent considerable time last year on this matter, and we are hardly in position to accept the same degree of ratio of cases in this country as in Germany. Myopia in this country plays its part but I doubt whether it is the most frequent cause. My experience has been they are practically all syphilitic. I think a great many of our cases of choroiditis are not choroiditis. The diagnosis is made frequently of choroiditis when you have something else and can't see the choroid or see the fundus of the eye. I think a number of our cases of choroiditis are simply and purely hyalitis. But I just got on my feet merely to speak of the presence of myopia among the Germans.

Dr. Barnes. There are about 50 per cent of the cases of choroiditis that we are absolutely unable to give any cause for, however it is the general opinion of us all that it is due to syphilis, but the treatment will not carry that out. You may give iodide and mercury in those cases and they

will not get any better, so it is a question for us all to study the exact cause of choroiditis. I think very often Choroiditis is preceded by Hyalitis; we have those spots in the eye and afterwards a development of the choroid, and I rather think that is a forerunner of choroiditis. And the choroiditis is not recognized at the time but afterwards shows up. It being of a chronic nature it gets quite a hold on the patient before the patient realizes it, for as the Doctor brought out in his paper, there is no pain noticed and pain is one of the greatest blessings to humanity we have. If they don't have pain they will not seek the doctor's advice. They will go along and allow themselves to do that and go blind. If they have no roaring in the ear or pain they do not seek the advice of a Doctor until they can't see a man across the street, so we are hindered in the treatment of these cases because we don't always see them early in the attack.

Dr. M. K. Thompson: The writer's experience is somewhat like the rest of us, the choroiditis I find a pretty hard thing to find in many instances. Now there are just as many in Germany have the myopia as here. But my idea with reference to choroiditis is that the only treatment we have is specific treatment, treatment for syphilis as I think it is very often brought on here from syphilis. We frequently see that condition in younger people that in all probability have inherited it rather than acquired it. But it is a pretty hard matter sometimes to tell the difference between hyalitis and other troubles.

Dr. Jenkins: Gentlemen, I thank you all very heartily for the discussion and interest you have shown in the paper. In writing the paper I did not expect to cover the ground of choroiditis. My idea of a paper at a medical association is a paper that expresses some of our individual experiences, or in some way to bring out the discussion and get the various experiences of the different men. Any of us can sit down between the hours of supper time and midnight and look up the text books and get the things out of them, and while I refer to authorities and consulted several authorities before writing this paper, but it was more to report on the ratio and frequency of the disease occurring. In several instances, if you remember the paper, I spoke of my personal observation. I didn't set the thing forward as an actual fact but because it did exist as Jenkins found it, and I want to find out how it existed as Dr. Thompson and those other gentlemen find it in their work. Dr. Cook evidently didn't understand me in the outset there about the occurrence of this disease; he evidently didn't understand what I said. "Inflammation of the choroid is met with more often than any of the intraocular diseases of the eye." I agree with Dr. Cook the disease on which he will present a paper occurs more often than does this of the eye. But several authorities that I consulted stated that Choroiditis occurs more often, and I don't know as I will be able to say myself positively, I agree with Dr. Cook that hyalitis does occur very frequently. I have found that iritis exists but I look on choroiditis as being the fundamental disease, and the iritis as a complication, of course they have to be taken care of and treated.

And one of the other Doctors spoke of it being sometimes called that, that he now believed that some cases were inflammation of the retina that he formerly thought was choroiditis. Well the authorities I consulted there teaches us and my observation by using the telescope I think we are able to diagnose between trouble in the retina and the trouble in the choroid. But if you will follow these specks up that begin at the nerve head and follow the blood vessels as in the retina you will find it in front and by itself in the choroid, it will be back of the choroid. Now a great many cases we all agree that syphilis is the cause; and I have treated cases and considered that I got reasonably good results where to my mind and satisfaction anyhow syphilis was eliminated beyond any shadow of a doubt. Anyhow my experience is different from one of the other Doctors about treating choroiditis. The majority of mine get better, and I feel very thankful for it. I thank you, gentlemen.

CHLOROFORM.

By Dr. Wm. Fowler, Alderson, Oklahoma.

Walk with me, if you will, please, three blocks north of the world-famous Princess Street, Edinburgh, lift the knocker at 84 Queen Square, step into the front room on the left and we are in the room in which Chloroform was first administered as an anesthetic for surgical purposes,—we are in the home of Prof. A. R. Simpson, the former home of his uncle, Sir James Young Simpson, who in March, 1847, demonstrated to the world the anesthetic properties of the chemical under consideration.

Dr. Simpson, actuated by an intense desire to find something that would annul or assuage the awful pain of parturient woman, had tested various remedies and substances sent him from many sources, all of which found a waste basket grave, and when a small bottle of chloroform was sent to him, by a chemist he and his co-laborers, (chief among whom was Matthews Duncan, afterwards of London fame), were afraid to use it because of its specific gravity. The fact that it was one and one-half times heavier than water made them afraid to use it, and this sample, too, found its way to the waste pile. Sometime afterwards however, when Dr. Simpson was overhauling this pile of rubbish, this same sample bottle of chloroform rolled out upon the floor, it was picked up and tested, with the result that today we have the most widely used anesthetic.

This, however, is not the history of chloroform. This wonderful agent, unlike you or I, can claim a birthplace in three different countries, with as many parents, and strange as it may seem, all these births occurred the same year—1831.

Soubeiran, a French chemist, Lubig, a German chemist, and Samuel Guthrie, of Sacketts Harbour, N. Y., found chloroform to be a chemical curiosity. They were looking for a diffusible stimulant, and thought they had found an easy and cheap way of making Dutch liquid (Ethene dichloride), which had been tried as an anesthetic but which had no practical value as such.

Dr. Guthrie in experimenting with chlorinated lime, undoubtedly obtained a pure chloroform, but erroneously supposed his product to be simply a stimulant. He never dreamed that that produced would become famous. He was looking for copper but found gold.

Chloroform is made chiefly from bleaching powder distilled with water and alcohol. Dr. Squibb and Gregory discovered that chloroform purified with sulphuric acid made a very dense liquid, too irritating and prone to decomposition when exposed to the sunlight, and recommended the addition of a little alcohol, just enough to lower its specific gravity to about 1.490.

Squibbs chloroform of today averages 1.492 at 15° C.

As prepared by Mr. Guthrie this chemical was used as early as 1832, by Professor Ives of New Haven, in asthma, spasmodic cough, etc. In 1838 by Dr. Formby of Liverpool, for hysteria, and Dr. Tuson of London used it in cancer and neuralgia in 1843.

It is today an ingredient in many liniments, and is most useful, being applicable in almost all cases where a rubifacient is indicated.

Chloroform has powerful solvent and antiseptic properties; 20 M. will prevent yeast fermentation in 16 ounces of malt, and the same amount will keep a half pint of milk (pure cow's milk) in any weather forever. This is worth remembering because of the fact that by raising the temperature of the milk to the boiling point the chloroform is gone—not so with many other preservatives and adulterants.

When taken into the stomach chloroform is without doubt partially evaporated, so that we get both a local anodyne effect, and a stimulant carminative action, thus removing gases accumulating in the stomach and bowels. Yea, more—by its antiseptic action it tends to prevent their formation. For this reason it is a valuable remedy in the treatment of colic, constipation, intestinal fermentation, etc. But it is as an anesthetic that we think of chloroform the most.

This paper is not intended to deal with chloroform-ether controversy. Suffice it to say that generally speaking the choice of the anesthetic is a matter of custom and training. In Scotland and the continent chloroform is preferred. In New England, in fact the entire Atlantic Coast, ether is the choice. In the middle west chloroform seems to lead but in the newer west, which is filled up with men from almost every college and hospital centre, we, as we might expect, find a varied choice. Personally, being of Scotch extraction, I like chloroform. Had I been born in bean-eating Boston I would use nothing but ether.

In obstetrics chloroform still enjoys the place given it by the master mind of Simpson.

In the administration of chloroform as an anesthetic in surgery, two things that are often forgotten should be remembered. The first is the rule to give just enough chloroform to produce anesthesia and a little less. The second is the fact that the anesthetist is the man in charge of the entire performance.

Chloroform is so treacherous that the man in charge of the anesthetic may at any minute require assistance, hence all those concerned in the operation should be at his immediate command; when this fact is rightly recognized there will be little need of imposing the oft repeated rule that "the anesthetist should watch, first, the respiration; second, the reflexes, third, the circulation, always the patient, but never the operation."

The fact that this anesthetic is treacherous proves the truth and importance of our first rule: "that the patient should receive just enough chloroform to produce anesthesia and if possible a little less."

Because of its treacherous nature the anethetist should always have at his command a mouth gag, tongue forceps, towel, small pieces of gauze on long handled forceps, hypodermic needle loaded with strychnine or strychnia, nitroglycerine and digitalin, also a fountain syringe with Canula and salt solution, and adrenalin.

The mouth gag is not so important but oftentimes useful. The tongue forceps should be carefully selected, a small single pronged volsellum or tenaculum forcep is perhaps the best—many of our tongue forceps are a joke—good things to squeeze a tongue that the patient is kind enough to leave hanging over the chin for our convenience, but unfortunately in chloroform anesthesia, the reason we require a tongue forcep is because of the peculiar and dangerous habit patients have of "swallowing the tongue" and the instrument necessary is that instrument which can best be introduced through a small opening and made to fish this obstreperous member out from its hiding place.

The small pieces of gauze are to swab out the throat with whenever necessary—the towel for obvious and various purposes.

The hypodermic needle should be loaded, for two reasons, first, it is more convenient; second, it insures a needle in working order.

The combination tablet of strychnine, nitroglycerine and digitaline is perhaps the best stimulant for general use. Nitroglycerine is quick, but its action is soon over, this, however, is taken up by the digitaline, and the strychnine sustains both, but more important than any of these in near fatal cases is the salt solution, with some adrenalin introduced with it.

Of the different ways of administering chloroform the drop method seems preferable, plenty of chloroform with plenty of air is good, but plenty of air with the drop method is better. Various contrivances have been introduced for dropping the chloroform from a bottle, but the simple cork with a "V" shaped piece cut out of it is the best, a glass stoppered bottle is now made of the same type. Many forms of masks and machines for the proper administration of this anesthetic is made. The first thing of this kind ever used, was a double lipped metal flask shaped somewhat like an eye bath, but made to fit over the mouth. This instrument may yet be seen in Dr. Balantyne's room in Surgeons' Hall, Edinburgh.

The thing most used today is Esmarch's wire mask, or one similar to it—the only practical thing yet made. Several mechanical contrivances have been patented and marketed by our ever busy instrument makers, traps that measure the exact percent of oxygen and chloroform inhaled and exhaled with every breath, with a mathematical precision that is astonishing, they are all good. To administer chloroform in a 2% solution is ideal but

most of these machines in practice have been weighed in the balance and found wanting.

Some controversy exists among physiologists as to the exact way death occurs from chloroform, but this much is certain. The vapor of chloroform is taken up by the red corpuscles and forms dissociable or unstable compounds with the cell substance; this leads to an embarrassment or paralysis of the cerebral and reflex centres, any one of which may succumb to a sudden influx of blood heavily charged with the vapor, causing instantaneous death. The vaso motor centres controlling the coronary arteries seem to be the weakest in this regard.

In the production of anesthesia with chloroform many things either directly or indirectly have influence on the amount of vapor used, and remembering our first rule, "To give just enough chloroform and a little less," leads us to a discussion of the proper handling of the patient.

First and most important, the patient should have implicit confidence in the anesthetist—as things go today the patient engages the surgeon—he engages that surgeon in whom he or she have the most confidence. It should then be the surgeon's duty and privilege to engage the anesthetist and arrange for his pay, and further, to assure the patient that this anesthetist is one in whom he or she may safely place their lives—this properly done is over half the battle. It is now much easier for the anesthetist to lead the patient to the operating table to examine her (assuming the patient to be a lady) heart, mouth, reflexes, etc., (the examination for organic disease, renal difficulty and so forth is presumed to have been done under the direction of the surgeon before the operation is settled upon). The anesthetist should now assure his patient that he will take good care of her while she enjoys a good quiet sleep. He should then arrange the mask, asking the patient if it fits comfortably or otherwise making her feel that he is looking after her comfort and safety.

Nervous patients may be previously fortified with some brandy, or brandy and nux vomica, or simply hot water or tea. No food should be in the stomach, but water is permissible, indeed is to be recommended if given about half an hour before beginning the administration of the anesthetic. It is a means of preventing that awful thirst which often follows anesthesia, also much of the irritant action of the vapor on the mucous membrane of the stomach.

Some surgeons recommend the hypodermic administration of some morphine just previous to the operation. Why, I know not. It is contra-indicated inasmuch as it interferes with the reflexes, the very thing you want to depend upon for reliable information as to the condition of your patient. If the conjunctival reflexes are gone, and pupillary reflexes still acting, the patient is perfectly safe, but if all reflexes are lost and the pupils widely dilated, profound anesthesia exists, and the patient's breathing must be carefully watched. The use of scopolamin and morphine preliminary to that

of chloroform has certain advantages, but it renders the problem of anesthesia more complicated, requiring extreme care, judgment and discretion. So says the summary to a study of this combination, as reported in the A. M. A. Journal. The use of scopolamin or hyoscine or atropine alone would be better than in combination with morphine, as their tendency is to act on the cerebral centres rather than on the reflexus.

Why one should tell the patient to breathe natural I know not. Natural breathing is an unconscious affair, make it conscious and it at once becomes unnatural. If the patient speaks of the breathing themselves, (as some do) answer them in a way that they will believe that you have no concern as to how they breathe; if at any time you want them to take a long breath tell them so, give them something definite to do, and when done change the subject.

Most patients go to the operating table with a natural dread of the anesthetic: especially are they afraid of getting too much chloroform. This can oftentimes be overcome by putting one or two drops on the mask, then waiting for the patient to indicate that they cannot smell it at all, when it is well to assure them that you are giving it slowly for their comfort, then push the chloroform. In Simpson's day, however, they would put a dram or two on the sponge, and have their patient anesthetized in one minute or less—indeed, it is oftentimes done in two or three minutes in some of the Old Country hospitals today—not so if one uses the drop method.

A very important thing to observe is to drop a drop of the liquid on the mask just at the beginning of each inspiration, when the inspiratory movement is over there is no good reason for leaving the mask on the face, on the contrary, it is good to remove it so that the expired air laden with carbon dioxide (CO_2) will not be caught in it. In this way the chloroform is always mixed with pure air and adds to the safety of the event.

Sometimes patients seem to stop breathing or forget to breathe if they do, knead the ribs under the arm pits: a deep breath nearly always results, at which time it is important to have a fresh drop of chloroform on the mask, but never a mask that you have saturated with chloroform while waiting for the patient to breathe or finish struggling.

The patient's head should be placed at that angle that best relaxes all of the muscles of the neck.

A head that is fattened to a large round body by a short, thick, fat neck, it may require a pillow to do this; in other cases the pillow may do better service under the shoulders.

Patients sometimes complain of a choking sensation, just a short time before consciousness is lost. If they do, instruct them to blow the vapor away from them, have them blow vigorously: a deep breath always follows this trick, when if a fresh drop of chloroform is placed on the mask, at the

beginning of this inspiration, the vapor is distributed over the entire lung surface the spasm is overcome and the choking is gone.

Many of these little things, simple as they may seem, all contribute to comfort, safety and minimum dosage, but there is another force, more potent than any mentioned, of which I wish to speak.

The first action of chloroform on the cerebral centres is stimulation, the second is not well defined. It may be paralysis, perhaps anemia, perhaps coma, but one thing it certainly is and that thing is sleep. With the beginning of anesthesia comes a time when the patient's thought centers are most active, chloroform increases that activity. There is no time in the patient's when the subjective or the thinking mind, (that mind that acts and reacts upon itself), is so active, so alert, so impressionable, so open to suggestion.

It is not the purpose of this paper to discuss suggestive therapeutics save only as it is a means toward minimum dosage of chloroform.

In using it to aid this drug in the production of anesthesia the one thing to do is to keep the patient's mind filled (saturated) with the idea that they are going into a quiet sleep, during which they will feel no pain, and from which they will awake refreshed and glad, or any other idea that will crowd out all thoughts of fear or fright, or distrust, or opposition to the intended anesthesia. Hewitt remarks, "With a little care, it is often possible to make a pleasant impression upon the mind prior to the loss of consciousness, and this pleasant impression result in agreeable dreams rather than frightful nightmares.

How this is best accomplished depends upon the individuality of patient and anesthetist, and requires further research, but in a general way we may venture some hints. If possible engage the patient in conversation, if they will talk of other things let them lead the conversation, the anesthetist using his influence to keep it going, by joining the patient in the subject. If it's joking, joke with them; if they laugh, laugh with them; if they sing sing with them; if they pray, ah, ah, pray with them, (it may do thee good). The thought is to keep their mind busy at something other than the operation. If they will not talk, then talk to them, lecture them in a monotone voice. It is well sometimes to explain to them the way sleep comes on and when you see that they are really getting sleepy, make a suggestion that they are now almost asleep, and afterwards drive home that suggestion by more direct and pointed ones, remembering that we ourselves have been put to sleep in the lecture room by the monotone of some of our teachers.

The anesthetist requires no super-human intelligence or effort to do this, but tact is everything, without tact and the patient's confidence little can be done with suggestion, but wherever possible, it should be encouraged because of the fact that when suggestion has been used a minimum amount of chloroform was used, and that patient's have conversed intelligently with the anesthetist while the surgeon was in the midst of a major operation and

too, that operations have been done under suggestion alone. All these hints if carried out, tends to safety and minimum dosage of chloroform and largely eliminates all danger of the drug, but, on the other hand, be it ever remembered that this drug is a treacherous one, "It kills alike the robust, the weak, the well and the diseased, even the previous safe passage through one or more inhalations is no guarantee against its lethal action. It kills without warning, so suddenly that no forethought or skill, or cure, can guard against the fatal result."

The drug falls on the mask, drop by drop. The patient lies as if in a deep sleep, but in the twinkling of an eye sometimes, something, somehow, somewhere goes wrong, and life is gone.

DISCUSSION.

Dr. Gordon, Wagoner:

I like the paper very much. I think it well for us all to think well about the matter before beginning an operation. The doctor has mastered the matter and I like him because he looks so closely after the welfare of the patient.

Dr. Virgil Berry, Okmulgee:

No one will deny that the doctor's paper from a chloroform standpoint was a very able one. But I protest against the use of chloroform. I use ether. We can put them to sleep just as well and with so much less danger.

As to the anesthetist, the same thing applies as in chloroform.

I have heard the contention that in the South they did not give ether. I have been told that it could not be used in the South but that is a mistake, for it is used except in very exceptional cases.

My experience with chloroform has not been good. I had a case of ovarian cyst to operate, and the patient died just after anesthesia was established.

Another case where chloroform was used was that of a boy with an injury to his foot. We had a long hard time of it getting him out from the effects. I know ether is safe.

Dr. Haskins, Nashville, Tenn.

I think the best anesthetists we have today are the ones who give the least necessary.

In my opinion the best anesthetic we have today, except for the lying-in chamber, are nitrous oxide and oxygen. Patients have been kept under this anesthesia for hours. One at John Hopkins was kept under the influence for six hours and woke up all right on the table. (It was an operation for sarcoma.) If we have no pulmonary or renal trouble I believe it is an excellent anesthetic. If we have very nervous patients, ether must be used.

Nitrous oxyde and oxygen are used by the Mayos in Rochester.

Dr. Fowler, closing:

I just want to thank you for the kind and enthusiastic reception given my paper. Thank you.

UNIVERSITY OF OKLAHOMA, SCHOOL OF MEDICINE.

Robert F. Williams, Dean, Oklahoma City, Oklahoma.

The reorganization of the School of Medicine of the University of Oklahoma was undertaken for the purpose of immediately elevating its standard to the requirements of Class A institutions, as defined by the Council on Medical Education of the A. M. A. and the Association of American Medical Colleges.

An essential requirement for this standard is that a medical school shall control its own hospital. This condition had not been previously possible of attainment by the University Medical School, and to accomplish this end our energies were first directed. Hearing that the city was not in condition to conduct the City General Hospital, which was nearly completed, we made tentative proposals to the Commissioner looking to the acquisition of the city's hospital. Our proposition was at first cordially received, but opposition to the plan subsequently developed which led the Commissioner to name conditions impossible of acceptance by us, so that our proposition was withdrawn and the plan abandoned.

It then appeared that Oklahoma City could not offer the School the necessary hospital facilities, and a visit was made to Muskogee. The city authorities there and the profession showed an admirable public spirit in their readiness to meet any reasonable demands for quartering this department of the State University, which was greatly appreciated. The distance from Norman, the seat of the University, however, was the great difficulty. While this matter was under consideration Dr. J. B. Rolater came forward with a generous offer to enlarge his private hospital to meet our needs, and to lease us his hospital and adjacent residence for a term of ten years at a very reasonable annual rental, and this offer was accepted.

The residence provides us with a beautiful school building which any medical school would be proud to occupy. The handsome exterior attracts immediate attention by its beauty and dignity. The interior is finished throughout in hard wood and has been handsomely equipped in harmony with the building with durable and serviceable furniture.

On the first floor are the general office, the Dean's private office, the library and the clinical laboratory; while the second floor contains lecture rooms for the Junior and Senior classes, a study room and a rest room for students, and the toilets.

The additions to the hospital are being pushed rapidly and we expect to get possession of the building early in December. The addition will increase the capacity of the building from twenty-two beds to sixty-four. When

completed, the hospital will contain twenty-six ward beds. The wards for white men and white women will have nine beds each and those for colored men and colored women will have four beds each. The rest of the beds will be in private rooms, a few of which will contain two beds. Several of the rooms will have private baths, and all of them will be fitted with the most comfortable beds purchasable with box springs and felt mattresses.

The hospital will contain three operating rooms, thoroughly modern in finish and equipment, and well lighted for use by day or night. Adjacent to these will be two sterilizing and wash rooms, which will greatly expedite the work in this department.

An attractive feature of the hospital will be the large sun parlor located at the southeast corner of the building. This will be comfortably furnished in Mission and Wicker. Above it will be a spacious covered porch, besides the verandas, which extend around the building on both floors.

In the basement will be located the free dispensary for walking patients, a most valuable adjunct to our teaching facilities. This department will be comfortably arranged, with waiting rooms for white and colored patients, and private rooms for examining patients and instructing students.

This institution will be equipped to care for all classes of cases, and will receive all classes except contagious diseases.

The school opened October 2nd and is now in full running order, with a Faculty and student body enthusiastic in this work. The courses have been arranged, with regard to subjects required and the number of hours given in each, exactly according to the requirements of the Association of American Medical Colleges for the standard of Class A institutions.

The quick development of such an institution as we have, without special appropriation by the Legislature, has taxed the financial strength of the University, but the Board of Education, recognizing its need, directed that the plan be carried out and the authorities of the University have concurred generously in the furtherance of the development of the Medical School. All of these, gentlemen, by this recognition of the claims of the Medical Profession to the largest consideration in our highest institution of learning, have won the approbation of the profession throughout the state.

Through the courtesy and interest of the Medical Faculty, a library is being developed by gift and loan of books and subscription to medical journals which will do the school infinite credit and be of untold benefit to both Faculty and students. In several instances whole libraries have been loaned with the prospect of donation later.

To date we have a total of fifty-two students, thirty-two at Norman in the Freshman and Sophomore classes, and twenty in Oklahoma City, in the Junior and Senior classes. All of the classes are far above the average in intelligence and industry.

The schedule has been arranged so that the students in Oklahoma City have their Saturday afternoons free for the purpose of enabling them to affiliate in the student life of the University in Norman.

The Hospital, which has been officially named by the Board of Education, "The State University Hospital" (formerly Rolater Hospital), will have as Superintendent Miss A. B. Cowles, a lady of large experience in hospital management, and at present Superintendent of the Colonia Hospital in Mexico City.

Already we have been approached by charitable societies looking to the maintenance of beds, and inquiries have been made concerning the endowment of rooms, gratifying evidences of the confidence of the public in the State University Hospital.

A Training School for nurses will be conducted under the direction of the Superintendent, Miss Cowles. Here in a three-year graded course every facility will be offered the young women of the state for a thorough and rounded training in the art of nursing under the tutelage of trained nurses of wide experience and of the Faculty of the school of Medicine.

The hospital on opening will be organized with a full corps of nurses, orderlies, etc. A graduate physician will be appointed interne and he will live in the hospital. The position of interne, carrying as it does an unequalled opportunity for the development of clinical skill and professional poise, will be filled each year from the graduates, selection for the position being the highest possible compliment to the successful applicant.

EDITORIAL.

NOSTRUMS AT HOME.

The American Medical Association through its campaign of publicity and the Federal Government, through legal prosecutions, are making matters uncomfortable for the exploiters of nostrums, the "patent medicine" as well as the "ethical specialty." But those who favor honesty and decency in matters pertaining to medicines must give their active support, if much is to be accomplished. The state medical societies, the county societies and individual physicians should lend their active support in the fight against dishonest and viscious nostrums.

The federal authorities entrusted with the enforcement of the Food and Drugs Act are in particualr need of support. The Food and Drug Act is a federal law and hence applies only to the territories and to interstate traffic and thus is powerless as concerns the worst kind of fraud when the medicine is sold only in the state in which it is made. As a result, firms that get in the toils of the federal law are able to get along comfortably by devoting their energies to the exploitation of their dishonest stuff in their own state. That is, when it is not safe to send their concoctions out of the state the efforts to sell them at home is doubled and trebled. For this reason each state should pay particular attention to the "home industry" in frauds. On another page we give some recent convictions under the Food and Drugs Act. The nostrums exposed by these convictions should be suppressed by the authorities of the states in which they are manufactured. We suggest that physicians bring the matter to the attention of those persons in their state whose duty it is to protect the health of the people and to point out to these authorities how they may perform a valuable service to their constituents.

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THE REVISED OWEN BILL AND ITS OPPONENTS.

Two years ago Senator Owen introduced his well known bill for the purpose of consolidating all existing National Health Agencies excepting, for obvious reasons those in connection with the Army and Navy. This bill was of the Senator's own volition and creation, having for its object a more efficient protection of the welfare of the people generally.

Perhaps no greater surprise could have been received than was produced by the immediate and concentrated opposition to its enactment. Some of this opposition came from Osteopathic, Homeopathic, Eclectic and Christian Science organizations and throughout all was a strong undercurrent of hostility from manufacturers, or their agents, of questionable products.

The opposition to this measure may be divided into two classes; those who honestly oppose it from a mistaken idea that its passage would imperil their right to employ such a school of medicine as they thought best; those who oppose it from religious motives and those who oppose it simply because its passage would prevent them possibly from exploitation of impure drugs, foods and disreputable practices generally.

To those who conscientiously oppose, no blame should be attached except that of bias, ignorance of the proposed law or general misinterpretation of its terms and purposes.

To meet and answer such objectors the new proposal specifically states that no school or system of medicine shall be favored in its enforcement and declares that no existing States Rights shall be impaired.

This change, which was unnecessary, for our Supreme Court would not allow in any event, a law prejudicial to one class and favoring another to stand nor could the rights of states be infringed; seems not to have changed the attitude of the opposition and there is still a general effort to prevent its passage in any form.

Just how a law solidifying those scattered Bureaus and making them more effective should meet with opposition from honest and intelligent people is unexplainable except on the grounds above mentioned. Of course no one expects anything but opposition from a certain class of manufacturers and exploiters of discreditable products; their danger lies in their ability to place on the market cheap and impure products and any regulation with which they might possibly come in contact would subject them to something they cannot stand—the broad glare of daylight and truth.

A branch of the Department of Agriculture, the Bureau of Animal Industry will at present advise a farmer in California, Iowa or Maine how best

to combat disease in his hogs and cattle, even sending an expert to assist him, another Bureau of the same Department advises him on the destruction of San Jose scale, the enriching of his run-down lands, etc. It is just possible that to some of these objectors it has occurred that a Department of Health would among other functions assume it a duty to advise a community on the prevention and control of diphtheria, scarlet fever and tuberculosis. It is just possible that the department would advise some poor wretch who was spending his last dollar for a "consumption cure" consisting of morphine chloroform and squills that his hope lay not in medicines, but good food and proper environment. It might advise the user of Doan's Kidney Pills to have his urine examined by a chemist to see if he really has a kidney lesion or simple lumbago. It might even enlighten some layman to the fact that the bitters that cured his stomachache would signally fail to benefit his neighbor who had apparently similar symptoms but who in reality had something else.

The opponents of this measure should understand that the President of the United States, the Republican and Democratic platforms endorsed the spirit and essentials of this proposed law and that in the same Congress having this bill under consideration several bills having the aim of the Owen bill in view were presented and that the Owen bill was the one given more thought than all the others combined.

They should not be veritable dogs in the manger; if they do not want to eat hay they should not object to our eating it and those schools of medicine opposing this measure should not be hitched up in the company of disreputables in their opposition.

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NEW BOOKS

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL

(Mayo Clinic) 1910

Collected Papers by the Staff of St. Mary's Hospital (Mayo Clinic) for 1910. Octavo of 633 pages, illustrated. Philadelphia and London. W. B. Sanders Company, 1911. Cloth, \$5.50 net.

This very interesting volume is really a history of the various operative procedures of the Mayo's and their Staff at Rochester with the papers read before different medical societies of the country during the year 1910.

It should prove of great interest to the surgeon, especially, and is of undoubted value to the general practitioner as it covers the points of diagnosis thoroughly in those subjects considered.

The illustrations are clear and attractive, the paper of good, smooth quality bringing the cuts out clearly and adding to the general make-up materially.

The book is well worth while and should find a large number of readers in the profession.

A MANUAL OF THE PRACTICE OF MEDICINE

The New (9th) Edition Revised.

A manual of Practice of Medicine, by A. A. Stevens, A. M., M. D., Professor of Therapeutics and Clinical Medicine in the Woman's Medical College of Pennsylvania. Ninth Edition, Revised. 12mo of 573 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1911. Flexible Leather, \$2.50 net.

This little volume is prepared with a view of giving the busy man and student a reliable and ready work of reference on the practice of medicine. Of course its size prevents a great enlargement of the subjects, but the salient features and important points and phases of disease is clearly given.

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It will be found a volume of great convenience to the user.

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The publishers point out the following striking features in this new edition as being worthy of notice by the medical profession.

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A Text-Book of the Practice of Medicine, by James M. Anders, M. D., Ph. D., LL. D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Tenth Revised Edition. Octavo of 1328 pages, fully illustrated. Philadelphia and London. W. B. Sanders Company, 1911. Cloth, \$5.50 net; Half Morocco, \$7.00 net.

Anders' Practice has stood the test of time and is today one of the best works of its kind in existence. This edition has been most thoroughly revised, the revision taking into scope the many recent changes in the field of medicine, and excluding, as much as possible controversial points.

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The text arrangement is good; the portions devoted to differential diagnosis being in logical order; the references and personal opinions and citations by the author are many and varied.

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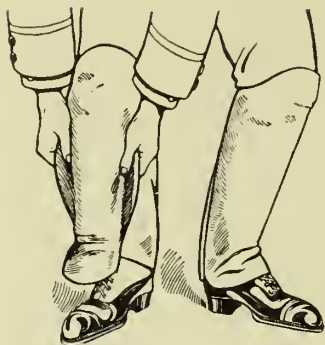
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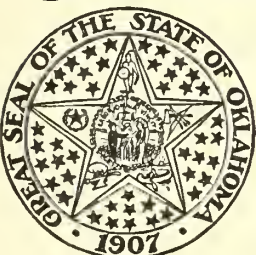
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Oklahoma State Medical Association.

VOL. IV

MUSKOGEE, OKLAHOMA, JANUARY, 1912

No. 8

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Entered at the Postoffice at Muskogee, Oklahoma, as Second Class Mail Matter, July 28, 1910.

This is the Official Journal of the Oklahoma Medical Association. All communications should be addressed to the Journal of the Oklahoma State Medical Assn., English Block, Muskogee, Oklahoma.

TREATMENT OF PELVIC ABSCESS.

By Dr. W. E. Dicken, Oklahoma City, Okla.

As used in gynecology the term "pelvic abscess" is somewhat vague, for, literally, it includes all forms of pus accumulations found in any part of the pelvis, from the appendix to the ischio-rectal fossa. Common usage, however, has confined it to intrapelvic suppurations in and about the uterus. The most common seat of the abscess is found in the uterin tube, or the ovary, rather than in the cellular tissue; but the object of this paper will be to bring out my treatment of pus found on the floor of the pelvis below the utero-sacral folds, or, anterior to the uterus in the cellular tissue.

Parametritic exudate is the product of a tissue reaction which follows invasion of microorganisms. The organisms concerned are almost exclusively streptococci and staphylococci, and, in isolated cases, tuberculosis and actinomycosis have been observed. The tissue reaction results in the deposition of a gelatinous fluid in the meshes of the connective tissue, and in the recent stage, represents a soft elastic swelling of the affected region, with blurring of the outline.

Read before Oklahoma State Medical Association, May 1911.

After the edema in the surrounding tissue has subsided by absorption, and the inflammatory fluid has coagulated, the exudate appears in its characteristic form as a hard tumor. The exudate may disappear completely by absorption, leaving normal, soft, connective tissue in its place, but there remains a brownish thickening which leads to the contraction of the tissues and uterine displacement.

If the exudate continues to spread, the same changes take place in the successive portions of the connective tissue, while absorption takes place in other places. If the exudate breaks down and suppurates, small abscesses are found in various places which gradually coalesce and produce large collections of pus that usually follow a definite path to the outer surface of the body.

The chronic exudative form of peritonitis is characterized by the presence of an exudate, and with this may be associated the symptoms of a pelvic abscess. In cases of the latter nature acute local pain is present in the earlier stages; there are also, decided abdominal tenderness, rapid pulse, fever, and yet, it is to be noted that, in the latter stages, fever is not necessarily present. It will also be observed that the more dense and indurated the walls of this mass are, the more apt are we to find a collection of pus rather than one of serum.

If, upon vaginal examination, you find the wall of pus arching upward, pushing the uterus up, the exudate lies in the cul-de-sac and must be reached through the posterior vaginal fornix. On the other hand, if we find it arching from above downward, the abdominal cavity should then be opened from above, in the usual manner, and free drainage established.

In the treatment of acute peritonitis two very important objects should be kept in view: first, that life may be saved; second, that the local changes resulting from the disease may be diminished as much as possible, both as regards their extent and as regards the seriousness of their character.

The therapeutic measures to be adopted must vary according to the nature of the infection. Inasmuch as most acute pelvic peritonitis is gonorrheal in origin, the prognosis is favorable, for, as a rule, life is not in extreme danger, and the tendency of gonorrhoeal or tubercular pelvic peritonitis should be dealt with through the abdominal route and not through the vagina.

Without taking up more of your time in dealing with this part of our subject, I wish to spend a few moments describing for your consideration what is, to my mind, the best and most rational plan of treatment of those cases of pelvic peritonitis when indications are such that drainage can be made through the posterior vaginal fornix, presenting two plans of treatment.

The classical form of treatment, as you all know, is to flex the patient's

legs on the abdomen while the patient is on her back. The surgeon, after the usual technic has been given, proceeds to make his opening in the vaginal fornix either with the scissor or knife, then packs the opening into the abscess with gauze to keep the opening from closing, and to afford the proper drainage. This gauze which is packed through the opening into the abscess cavity is a source of a great deal of annoyance to the surgeon as well as to the patient, for at the end of forty-eight hours, or sooner if there is a marked rise of temperature, the packing is removed under primary anesthesia and replaced by a sterile gauze wick, or a wick to each pus cavity if there are two.

The dressing should be changed every other day and after the seventh day the sinus may be irrigated with 1:800 chlorinated soda solution at each dressing. The sinus is drained by gauze wicks until it is closed to two inches in depth, and the temperature is normal.

The Fowler position is maintained forty-eight hours. The patient may sit up in bed at the end of a week, and if the temperature is normal may get up after the wicks are left out.

The plan of procedure which we now carry out is similar to the above, except in one respect, which at a glance you can see changes materially the plan of treatment.

Instead of cutting this (the vaginal fornix) with scissors or knife, we use the Paquelin Cautery, the remainder of the opening is broken up with the finger into the pus cavity. The burned incision takes about three weeks to go through all the stages of sloughing and healing, hence it cannot close until that time, and by the end of three weeks the abscess cavity has drained and closed.

Of course, the patient is kept in Fowler's position and is encouraged to get out of bed as soon as possible. The beauty of this operation over others is to lessen annoyance to the patient and doctor. Better and longer drainage is established.

I have been very much gratified in this operation for pelvic abscess and am pleased to have this opportunity to bring it before you for your kind consideration.

DISCUSSION

Dr. Callahan, Muskogee:

The condition referred to is brought about by three things—gonorrhoeal infection; abortion; infection from manipulation, either of instruments or hands.

The doctor says that where the accumulation is above the uterus, the

operation should be done through the vagina. I think that would be all right if pus has been thoroughly walled off from the intestines, but otherwise, would be dangerous as this pus is filled with gonococci. I believe the operation should be done before the formation of pus.

I have operated on these cases even after pus was passing through the bladder. The operation is simple. It consists simply of going through the fornix with a pair of seissors or a knife.

I believe in making the incision plenty wide and put in packing.

Dr. G. H. Butler, Tulsa:

You don't have to wait for a gallon of pus. As soon as you know there is pus, open and drain.

Keep patient in Fowler position for a week or two.

Dr. Dicken, closing:

The only point worth considering is that you burn your incision instead of cutting. You don't have to have all that drainage. The burnt incision must slough; it takes about three weeks to accomplish that, and the abscess ought to heal in three weeks. You do away with all that packing and the long time of the old operation.

Thank you very much.

SOME PREVENTABLE CAUSES OF DEATH IN EARLY INFANCY.

Effa V. Davis, M. D., Chicago.

The high rate of infant mortality in the first year of life should spur all physicians interested in the subject of pediatrics to seek some reasonable check to this waste of humanity.

The price set upon a baby has not been high enough in the past. We are just beginning to awaken to child values as evidenced by the public movements made by social and settlement workers, philanthropists, jurists, educators of all kinds and even the ordinary citizen. We hear of "Infant Welfare" exhibits and societies springing up everywhere, and lectures and moving picture shows now take up the subject of "The Baby's Cause" as a live and entertaining topic.

New York City gave a Child Welfare Exhibit last year and it was so successful that Chicago is having it reproduced this year with variations of a cost of \$50,000. One public-spirited woman of wealth paying the exhibit cost.

Such earnest work begins to put the life of a baby on its proper level. It shows us that the reasonable side of man is beginning to take charge of the steering work of life and that "instincts" while useful and to be treated respectfully must after all be trimmed and trained and put in order by reason that quality of mind that makes the sharp line of demarcation between the brute and the human.

When I look back twenty years to my student days I remember how little consideration was given the subject of the baby compared with that given the mother when the subject of obstetrics was taken up in the study of medicine. Most physicians of that day felt their duties to the baby ended when the cord was tied and cut and the infant having breathed well was handed over to the aunt, grandmother, a neighbor or any woman standing about, to be washed and dressed. A trained nurse was, of course, if in attendance, supposed to know all the arts and more than any one else left to her own devices where the baby was concerned. Now most women have an instinct to want to take care of their babies, but it takes more than instinctive desire to accomplish the art. There are facts being brought to light constantly that upset our traditional love and we find the baby, like all subjects that have been left to tradition and not studied in the cold light of scientific facts has suffered.

The first traditional mistake that we want to sweep out of existence is that babies are cheap, and it does not matter whether one dies here and

there or not. Until all humanity puts great store on a new life, and looks upon it as a part of the next generation in a reasonable way, we can hardly boast of any high state of civilization, but must still be in a state of savagery. So to check infant mortality, one must begin a generation before the child is born and educate the young to select wholesome, healthy mates for their future marriages. By making the study of Eugenics popular, it will not happen that the intemperate, the epileptic, the tubercular, the venereally afflicted, or the mentally unbalanced will be so often chosen in marriage. It is to be hoped that every state in the union will place a restricting law on its statute books to prevent such unfit from marrying and attempting to reproduce their kind. So much for prophylactics from an hereditary point of view. We know without more argument that "figs are not born of this-tle." Shutting out so far as possible the unfit by improved marriage laws and applying sterilization to habitual criminals, insane, epileptics, etc., we must then look upon the new born child when placed in our hands as an emblem of the new generation and the future nation, in which we as American patriots must put all our national pride and on which no amount of scientific observation should be spared.

It is amazing how long it took after printing was invented and other means of acquiring an education brought to us, that it was thought proper to allow women to be educated, and when it came to a scientific education the wise ones shook their heads and protested. They do some yet, I believe, but in the same breath these same people will tell you frankly when you put the high infant mortality before them. "Why yes, of course. Awful thing! Mostly due to ignorance on the part of the mothers!" and we agree with them on that score, but ignorance of what? Why, ignorance of chemistry, both organic and inorganic; ignorance of the laws of natural philosophy, physiology, biology and several other scientific studies. If young ladies were put through a smart scientific course on these things with their practical relations to domestic science, care of children, etc., it would save many a baby's life, and improve the race vastly more than a little French or German, some music and painting, and the other feminine accomplishments offered in young ladies' schools, not that we do not all appreciate these latter accomplishments. They have their place, but wholesome, healthy life comes first in importance.

In studying the proper care of infants in the past ten years, we find some radical changes have been taking place in the minds of the leaders of pediatrics.

The gospel of fresh air has had its effects on the care of children. We have the open air treatment of tuberculosis, pneumonia, marasmus, etc. No doubt many a nursling has been given pneumonia by having its face covered with blankets so it could breathe nothing but stale, contaminated air.

The gospel of breast feeding has also begun to supersede the assurance

of the would-be wise ones who lightly turned to bottle feeding, believing it to be "just as good."

The gospel of protection rather than exposure to contagious diseases during early infancy has also found an appreciative hearing. We no longer feel it a part of necessity that a child should have measles, whooping cough, mumps, chickenpox and scarlet fever.

The gospel of properly selected diet for young children so closely associated with the physiology of food and its chemistry, has come to stay if only in its babyhood.

The gospel of mental hygiene as associated with outdoor play grounds, gymnastics and games follow up the earlier and more important years.

Through proper consideration of the respiratory function many of the infant pneumonias so fatal can be avoided. The obstetrician should properly invest every child at birth to permit mucus and vaginal discharges to gravitate out of the nose and trachea. The air of the room in which the child is kept must be reasonably warm, but the ventilation should be well regulated. No attendant suffering from a cold or influenza should kiss or care for the very young baby or sleep in the same room as we find the influenza germ infecting babies with serious results, such as meningitis, and pneumonia and middle ear infections. Where resuscitation has been resorted to in new born babies, care should be taken to keep the body heat up as nothing is so fatal to a child's well-being as a chilled body directly after birth. Budin calls attention to this in his chapter on Weaklings in his work called "The Nursing."

Babies, to be safe, should not be taken out into large public gatherings except they be in the open air. They can not resist germ born diseases like adults and should not be exposed to them.

The breast feeding of babies is, as has been said, getting its proper support at the present time, but there are still too many careless weanings. A simple method of measuring the quantity of breast milk is to weigh the body before and after each feeding, subtract the difference and add these amounts in ounces for twenty-four hours, which will give one some idea as to quantity furnished against the quantity known to be sufficient. Observations made by the writer over the first month of life, gives as a standard for an average child weighing 7 to 7 1-2 pounds of 15 to 20 ounces daily after the first week. This milk in such quantities agrees best when taken in seven feedings during the first three weeks and in six feedings in the last week, possibly. If an average child gets less than that it will frequently show signs of hunger, lose or remain stationary in weight. The thing to do then in order to keep the mother up to her best in producing is not to skip a nursing period and give a bottle instead, but to give the breast each time, supplementing after the breast is drained with a bottle. The amount

given to be adjusted by the quantity known to be obtained first from the breast by weighing. This method will pay for all the trouble it may be if pursued through the first six months; after that age a child will thrive more easily if the mother's milk should then practically fail or the baby refuse to suck at the breast as they do sometimes when they become accustomed to a bottle.

Mothers frequently believe their milk disagrees with their babies when the trouble all lies in too frequent nursing. The healthiest babe in the world can be made sick on the best breast milk in the world by too frequent feeding. A dose of castor oil with proper intervals for nursing will take away all thoughts of weaning in many cases thereby saving the possibility of bottle feeding risks. The statistics of Chicago's Health Department showed during the summer of 1909 that for each breast-fed baby that died, fifteen bottle-fed infants were buried.

A certain few babies lack the proper instinct to grasp the mother's nipple and suck after birth. The writer has had to treat a number of such babies after being put on the bottle. Such situations can be overcome by various arts and where the mother has a nipple well enough developed for a child to seize I believe it is always possible to succeed if enough time and skill and patience are used. A nipple shield so formed that the first drop of milk drawn will gravitate into the child's mouth is helpful. The application of a little sweet sterile water to the nipple. The correct position for mother and child, etc., are all to be considered.

There is no doubt many infants die during the first month of life, through the effects of toxemia in their mothers during the last months of pregnancy which possibly have not been sufficiently marked for the attendant physician to take note of. It is the writer's habit when making an obstetrical engagement to warn the prospective mother not alone that she must bring a specimen of urine at stated intervals for chemical analysis, but to instruct her in the significance of the general signs of toxemia such as headaches, nausea and vomiting, sleeplessness, dullness or constant drowsiness, edema, etc., as these signs often precede albuminuria and are significant both for the welfare of the mother and child.

By diet and cathartics these cases can usually be safely carried on and the infant saved from absorption of enough of the poison, whatever it may be, to come through safely, but convulsion in the new born, a tardy instinct to suck, tardy urination and often mysterious deaths with the cause given as inanition on the death certificate are all due to such a toxic condition in the mother, not resulting in eclampsia with her and carelessly overlooked.

If the pediatrician and the obstetrician could get together more often there might be more intelligent care for the very young infant and the death rate might not be so high in the child's first month. The free use of alcoholics in the mother during pregnancy tends to a premature birth and often

to a toxic child with feeble heart action that easily succumbs to birth pressure, delayed respiration or pneumonia.

We are hearing quite a bit about industrial or occupational diseases in Illinois just now, the governor having appointed a commission to look into the results of the absorption of lead, brass and phosphorous, by those who work in trades where these articles are used. They, of course, are poisons which when absorbed into the system, produce grave consequence, and also affect the unborn child, but compared with alcohol and its similar effects they are scarcely worth a commission, when we consider the number of individuals affected. Someone will suggest, however, when we begin to ask for a restriction of the use of alcohol, that one cannot in a free country be deprived of the personal liberty of a moderate use of alcohol, but we find that there is a future generation asking for the right of a sound, healthy body at birth and we have no personal liberty great enough to warrant us in robbing an unborn child of its birthright. It is the true physician's part to educate his following on these matters, to create public opinion both by his habits and his teachings.

The subject of restricting contagious diseases among children has begun to take root in the public mind during the last few years, especially in large cities where they are so fatal. Some few years ago the Health Department in Chicago began to quarantine for measles and whooping cough. Doctors and citizens made a mild protest, but began to adjust themselves to the new arrangement of things when the commissioner reported as a reason that there were more deaths from these diseases than from scarlet fever and diphtheria. It is not necessary for all of the community to have suffered these contagious diseases, and no doubt we will be a more vigorous and tougher race when we begin to repudiate the belief that "children's diseases" are an inevitable part of childhood.

A nursing babe resists infectious diseases to a greater extent than the artificially fed, but I have had a number of cases of whooping cough in nursing babies, but three months old.

Stricter school inspection might prevent some of this distribution of contagion. We expect great progress in the next ten years along preventive medicine lines and out in your glorious new state where all traditions are being sharply questioned, and any amount of new ideas taken seriously, we hope the subject of the new child in all its splendid significance will receive its proper scientific study and be valued above all else that you possess.

NASAL OBSTRUCTIONS

By Dr. J. H. Barnes, Enid, Oklahoma

It may seem a little strange to some of you for me to write a paper on nasal obstructions for this section of diseases of children, for you may think that this is a subject for the specialist. We find that these troubles begin in childhood and can be prevented if taken in time and corrected. Obstruction in the nose itself is very seldom present and not noticed until the patient is old enough to tell you about it.

Nasal spurs and deflected septums, large turbinates and all the various sinus troubles have their beginning in childhood when the adenoids first make their appearance. They may not be large enough to obstruct the nose which they usually do in childhood, and yet the disease of them may be sufficient to cause a nasal catarrh that will cause a true hypertrophy of the turbinates and a thickening of the mucus lining of the nose which includes the lining of all the sinuses, producing a loss of nasal breathing and drainage and a loss of nasal resonance.

I have some drawings here which will aid to help you understand some of these structures that we are talking about for the nasal anatomy is not so easy to those who have not given it some study.

The superior maxillary which is well developed at birth is very soft and yielding and continues to be so till about puberty. Notice that this bone can be shaped and molded for dentists are pulling teeth into line and flattening and rounding hard palates from the age of twelve to fifteen. It is generally fixed and immovable by its position and articulation.

The septum of the nose is composed of bone and cartilage. Above is the perpendicular plate of the ethmoid, below is the vomer. And in front is cartilage. This septum is placed between solid bone above and below so if pressure is brought upon it it will bend one way or the other from internal or external forces. The septum plays the most important part in all nasal obstructions and diseases so this is where we look for troubles in all nasal diseases.

The turbinates are three in number. The inferior turbinate which is a separate bone is near the floor of the nose, the middle turbinate and the superior are part of the ethmoid bone. These scroll shaped bones are covered with mucous membrane which contain erectile tissue or swell bodies. This makes them susceptible to irritation causing a swelling and hypertrophy.

Read before the Section on General Medicine, Oklahoma State Medical Association, Muskogee, May 1911.

The swelling or boggy turbinate is called intumescent rhinitis, the other is hypertrophic rhinitis. Two very common forms of nasal obstructions.

They are to warm and moisten the air that we breathe. Normally they secrete about a pint of normal mucus in twenty-four hours so as to moisten the air. They act as sections in the radiators to warm the air.

The sinuses of the nose are very important structures for they have to do with nasal resonance which is fundamental for all good tones in speech as well as music. Our greatest musicians and speakers have good nasal resonance. Some of our best thinkers are handicapped because their nasal resonance prevents them from expressing themselves in a pleasing and interesting manner. This factor of the nasal function is not thought of by even the rhinologist as it should be. We often pass up the obstructions of the sinuses as of no consequence. Then, too, we are very radical in operating on the nose and removing more than is necessary.

The maxillary sinus in the superior maxillary bone one on each side is the largest and the one that is most frequently diseased. This sinus opens into the nose up under the middle turbinate. It is called the antrum of Highmore in some of our text books. It is well grown at birth. The opening being at the top of the sinus in the hiatus semilunaris, makes it difficult for it to drain, but being lined like all the sinuses with ciliated epithelial cells it is able to rid itself of all offending material as long as the epithelial cells are not destroyed.

The frontal sinus, two in number, just over the eye in the frontal bone. They are grown after birth about seven to twelve years of age. It may not develop and be absent in the adult. It opens through the infundibulum into the hiatus semilunaris. Disease of this sinus may drain down into the maxillary.

The ethmoid sinuses are in the ethmoid bone. They are several in number, some of them are quite large and some are very small. They are divided into two anterior and posterior ethmoid sinuses according to where they open. The anterior sinuses open under the middle turbinate while the posterior open above the middle turbinate.

The sphenoid sinus is in the sphenoid bone one on each side of the nose. They are posterior to all the sinuses just behind the posterior ethmoid sinuses. Its opening is high up on its anterior wall and empties above the middle turbinate.

You will readily see that all these sinuses open into the nose around the middle turbinate above and below. The maxillary and frontal and the anterior ethmoid empty under the middle turbinate and the posterior ethmoid and the sphenoid empty above the middle turbinate. Any obstruction in this region of the nose will cause obstruction of the sinuses one or all and will be followed by a great chain of symptoms commonly called catarrh of the nose. You may have a chronic discharge of pus from the nose with crusts.

The odor at times is bad. Polyps sometimes develop if the discharge is irritating. The pharynx and the larynx also become diseased from this pus. The turbinates and the mucus membrane swells and becomes thickened, also the lining of the sinuses hypertrophy and more or less obliterate the sinuses obstructing nasal respiration.

One of the most serious complications is the mouth breathing which will be described more fully later on. If you want to know just what effect mouth breathing has on your general system plug up your nose with cotton for one night.

Now we come to the true cause of all nasal obstruction. Adenoids which are called the thir tonsil is the prime cause of more than 90 per cent. of all nasal obstructions, first, by their enlargement obstructing the post nasal space. Second, their disease will cause a disease of the mucous membrane of the nose causing the turbinates to swell. Third, they indirectly cause spurs and deflections of the septum from mouth breathing.

Injuries to the nose, usually to the septum, will cause a certain per cent. of nasal obstructions. Football players and boxers are especially prone to nasal obstructions.

Adenoids are much more frequent than we think till we begin to look for them. We are surprised to see so many children afflicted with them. They begin in early childhood, as early as six or eight months in some cases. They usually atrophy some time before puberty. If allowed to remain they cause many diseases and complications such as earache and deafness, large tonsils, general mental debility and stunted growth.

They become large enough in many cases to obstruct nasal breathing and compels the child to breathe through its mouth while it is growing. This causes the hard palate to be pushed up by the atmospheric pressure. The hard palate is soft and yielding in the growing child, and it being the floor of the nose, it is pushed up into the nose. The septum will have to bend or be displaced to give room. This produces what we call spurs and deflections.

The spurs and deflections will cause defective drainage of the nose and retained secretions irritate the swelled bodies of the turbinates causing them to swell and hypertrophy till it is not only impossible to breathe through the nose but all the secretions are retained till the sinuses are infected, for the nose is the very best incubator for all kinds of organisms. The ciliated mucous lining of these sinuses are destroyed and we have an abscess cavity that must be broken down and obliterated before we can free our patient of a distressing and ill health disease.

If we make a diagnosis of adenoids when they first appear and remove them, we will prevent about 90 per cent of all this nasal trouble. The obstruction and disease of the nose and throat produces most all cases of deafness both the suppurative and the dry catarrh of the ear. Many of our per-

sistent headaches are caused by sinus disease and nasal pressure from enlarged turbinates and spurs, etc. Brain abscess is a very frequent complication of sinus disease. Atrophy of the optic nerve and orbital cellulitis are found in these nasal troubles.

The mental condition that we find in these cases is to be studied and worked out. It is certainly a great factor in education and the development of our boys and girls.

Adenoids in children is the most frequent cause of nasal obstruction. Spurs and deflections of the septum cause 90 per cent, of nasal diseases. High arch palate is a frequent symptom of adenoids. Spurs and deflections are most usually caused by high arch palates. Obstructions of the nose not only cause a nasal catarrh but will produce a thickening of the mucous membrane lining the sinuses causing a loss of nasal resinnence.

Mouth breathing in the young child is the most serious symptom of nasal obstruction.

THE PLACE OF PSYCHOTHERAPY IN THE HEALING ART

Dr. A. H. Stewart, Lawton, Oklahoma

Since the establishment of psychology upon a sound physiological basis we no longer think of the mind as a separate entity residing in but independent of the body. We now understand the brain to be not only the organ wherein the mind resides but the organ wherein mental energy is generated. It is the great central powerhouse of the nervous system, while the spinal cord is the transmitting cable, the nerves the sending and receiving wires and the ganglia or plexus, the sub-stations or tiny brain distributed about the body. The mind and the body are, therefore, not only intimately but inseparably connected. We might possibly conceive of a mental process, as a mathematical calculation going on in the brain with but little physical manifestation of such a process, but we cannot conceive of an emotion without conceiving of some physical evidence of such a process. Such importance has of late been attached to the physical evidence of emotion that it is claimed that by close observation and the use of certain delicate instruments, one can, under special trying circumstances, almost read the thoughts of another. The accelerated heart beat and the blush seen on the cheeks in surprise or embarrassment; the palor and muscular contraction seen in anger, all point to disturbance in the vasomotor and neuromuscular mechanism as surely as the needle points to the pole or the thermometer points to the degree of temperature. What we call emotion then, is inextricably bound up with the vasomotor and neuromuscular nervous system. In other words, emotion is a state of the body as well as a state of the mind. This is true, in a measure, of not only emotion but of all the attributes of the mind, even if we do not accept in its entirety the fascinating claim that not only the brain cells but the ganglia and each separate cell of the body is an intelligent entity endowed with intuitive knowledge of its being and an intelligence commensurate with its functions. Although here somewhat extravagantly stated it is nevertheless true that connected thought in all its phases is inseparably connected with body metabolism.

Although each organ of the body is composed of groups of cells which are differentiated according to their respective functions, each group is intimately connected by lines of intercommunication with every other group and every other cell so that the body acts as a unit in all its vital functions. It is not strange then, that so-called states of mind and states of body are so inseparably connected. But between vague transcendentalism on one side and gross materialism on the other the public mind has become much confused in regard to the true relation of mind and body, especially as to the influence of the one upon the other. According to the claims of the former all that is necessary to secure an everlasting panacea for all physical and mental ills

through mental processes is to enter freely into the great storehouse of psychic or spiritual knowledge and carve out huge chunks of precious healing balm, but once on the inside, the supply is not quite so abundant as they would have us believe but possibly more abundant than the others are always willing to admit. No one will question the great good that may come to a patient suffering from great physical pain and at the same time laboring under great mental dread or terror of impending danger by the confident assurance of a trusted physician, while administering a sedative, that certain relief will soon follow, and the physician who fails to avail himself of such a valuable therapeutic agent does a great injustice to himself and his patient. Yet if the suffering be due to the beginning of a virulent infection and the power of resistance is weak the disease will likely progress and possibly to a fatal termination just as though neither sedative or assurance had been given for neither of these nor even both combined can check the onward march or lessen the ravages of the invading foe. Courage and good cheer and even faith, if you will, are excellent aids in the sick room but neither can stay the hand of the silent reaper when he comes, and he who depends upon them altogether in serious physical disorders is likely to be frequently haunted by the ghost of the departed. While it is possible that even a flesh wound or fractured bone may heal more readily in the case of an optimist than in the case of a pessimist, the difference is not due to any extraneous influence that comes to the one or is withheld from the other, but because the one may, by a complacent but vigorous mental attitude give a firmer impetus to all the vital forces and thereby furnish a positive aid may lower vital resistance and thereby place a positive interference in the way of the healing process. To deny the truth of this is to deny the truth of our every-day experience in the sick room and to admit more is to join hands with the charlatan and sorceress. Whatever good comes to the physical organism comes as the result of physiological processes and not through any extraneous influences. While it is altogether probable that much of the marked improvement that often follows a mere change of environment is due to the influence of the mind upon the body, it is equally probable that much of the mental improvement often observed under similar conditions is due to the influence of the body upon the mind. There is a mutual action and reaction—a reciprocity of influences between mind and body. There is a real difference in the force and rate of circulation of the blood in the optimistic and pessimistic moods. Every thought we think and every emotion we feel registers itself upon the organism. Mosso, as we know, demonstrated that when a man is placed in a horizontal position on a delicately balanced table the head portion of the table goes down during the act of thinking, due doubtless to the increased afflux of blood to the brain. There appears little doubt but that in the joyous exuberant mental state the heart beat is firmer, more vigorous and the lung expansion more ample and the intake of oxygen greater than in the opposite depressed mental state. Much of the good that comes from travel, visiting health resorts and the treatment in

sanatoria, the rest, tranquility and blue room cures, unquestionably comes from the reciprocal action between mind and body.

There are abundant evidences, however, of the tremendous influence of mental states on vital processes without accepting in full many of the stories we have heard of the wonderful influence of the mind upon the body. Although we have heard it repeated time and again from our earliest recollection, there is no recorded case of a condemned criminal, after having been turned over to a number of doctors for experimental purposes, having died just because the doctors blindfolded him, let a stream of water trickle into a vessel and told him that he was bleeding to death. Nor is there any authentic case of any one having died merely because a number of doctors or other morbid minded persons assured him at different times and places, as previously arranged, that he was looking very ill. As a mere co-incidence men may have died at or about the time it was prophesied that they would and there may be instances of the hair turning white in one night from supposed grief or fright, but the fact that these did occur is no proof that they were due to the causes alleged. In nearly all the numerous cases of sudden death that occur each year under some sudden strain there are unmistakable evidences of some existing chronic disorder, as weakened blood vessel, heart lesion or kidney disease. These sudden deaths from extra strain on an already weakened organ or vessel, however, teach an impressive lesson as to the possible effect of even strong mental impression in critical physical disorders. In serious cases of many of the infectious diseases, especially typhoid and pneumonia, there are times when even a straw, as it were, might turn the balance one way or the other and a strong mental impression may prove to be that straw. But it is in the case of glandular secretions, perhaps, that physiologists obtain their most valuable information as to the intimate relation between states of the mind and states of the body. Within certain limits, whatever increases or decreases the blood supply to an organ or structure, proportionately increases or decreases the efficiency of the same. The familiar instance of fainting upon the receipt of disagreeable news is the result of the blood being suddenly diverted from the brain to other parts until connected thought ceases. "If the process of digestion happens to be going on at the time and the news is of such a nature as to give rise to great excitement or anger, digestion is instantly stopped, leaving the food to ferment and poison the body tissues, which it would otherwise have nourished." It is also highly probable that continued intensely agreeable or disagreeable mental states have a corresponding continued favorable or unfavorable effect on vital processes. But to say as some mental healers do that their treatment is applicable only to functional diseases is an indication, if not an open confession, that they do not understand what they are really trying to treat. About the only difference between an organic and functional disease is that in the former the causes and manner of development are understood while in the latter they are not. If, however, after centuries of research, medical science has failed to explain the antecedent causes of certain functional irregularities, how much less likely are mental healers to understand them.

Even if the physician does not fully understand the etiology and pathology of certain obscure functional irregularities he does understand that functional derangement usually means physical impairment and that certain therapeutic agents are indicated in certain physiological manifestations. This further restricts the use of psychotherapy, as an independent therapeutic agent to diseases of purely psychic origin, if such conditions can be conceived of. But it is extremely difficult to conceive of mental impairment, "either in the field of memory itself, its associated tracts, or in the region of intellectual association or co-ordination, without physical changes having taken place in these cell areas. In other words, it is difficult to conceive of attributes of the mind with a purely physical basis becoming so attenuated, so etherialized, that a trauma can be tucked away in some secluded spot or float about in the mental realm wholly independent of the action or influence of cerebral metabolism. But the probability of such an hypothesis does not necessarily preclude the possibility of the efficacy of psychotherapy in certain obscure psychic disturbances but it does still further indicate its limited field of usefulness as an independent therapeutic agent.

In every system of psychotherapy-hypnotism, re-education, psychoanalysis, Christian science and the Emmanuel treatment, the underlying secret of success is suggestion. As this, however, may be pathogenic as well as therapeutic it is of the utmost importance that it be employed only by an intelligent physician who understands the complex nature of the malady to be treated as well as the susceptibilities and idiosyncrasies of his patient. Nor should he enter into partnership with or relinquish any part of this responsibility to a non-medical pretender as has been suggested by some even high in the medical profession. Under no circumstances should there be a compromise with dishonor. While there need be no warfare of persecution, there should be a vigorous campaign of education against the blighting curse of the times, patent panaceas and the deluding sophistries of fakirs and charlatans. Hypnotic seances should be prohibited by law and any attempt to treat infectious diseases, wounds or recognized pathological conditions, by mental processes alone should be made a criminal offense. Nothing more definitely marks the progress of thought and intelligence than the elimination of mysticism from all the material affairs of life. This is especially true in the science of medicine. We have succeeded in getting control over diseases just in proportion as we have eliminated mysticism from our treatment. The more enlightenment, the less mysticism, the less enlightenment the more mysticism, applies alike to races and individuals. The line of progress of every nation from barbarism to civilization has been marked by dead idols and castaway superstitions. Enlightenment will ultimately do for all forms of blind occultism what it has already done for the rabbit's foot, the spilt salt and the moon over the left shoulder—relegate them to the graveyard of ignorance and enslaving superstition. Aside from the unquestioned harm that comes to many individual sufferers through the ignorance of charlatans the continued agitation of mind cures and mental healing

tends to increase rather than decrease the number of psychopaths in the community.

While each mental healing cult is hailed as a new and the only genuine system, and while its adherents are ever ready to demonstrate the truth of their claims by the cures they perform, history shows them all to be merely modifications of some of the various forms of occultism that are as old as the race. From the earliest recorded times crude or attenuated methods of divination and mystical healing have been used according to the degree of enlightenment of the people using them. This is one reason why so many systems are practiced in our stratified civilization in the United States. The different stages of social evolution through which our different tribes and races, and even the inhabitants of the many widely diverging social spheres are passing does not admit of any one universal superstition. As the one prerequisite in removing obsessions by all the systems is an unwavering faith in the efficacy of the means used the virtue is evidently in the mental attitude of the subject rather than in the object or means themselves. It is obviously immaterial, therefore, whether the object be a fetich or a deity. The surreptitious substitution of the bones of a culprit for those of a saint would make no difference with the unsuspecting devotee. If it be an American Indian who believes that the evil spirits, which he thinks inhabit sticks and stones, are the cause of his sickness his friends, equipped with bones and tom-toms, drive them away; if it be a plantation negro who believes in voodooism the voodoo doctor makes him whole, while if it be a member of an educated religious cult, hands are laid on, Divine aid implored and the man "Takes up his bed and walks." Suggestion being the underlying secret method the results are the same. Even the much lauded system of psychoanalysis appears to be largely one of suggestion from the very first, notwithstanding the claim of its adherents that certain preliminary treatment is necessary before suggestion can be successfully applied. While the operator, in his preliminary treatment, is working down through the various layers of long buried thought, by his continued sittings of one hour each day for from six months to three years to find the sore spot in the soul, he is unconsciously substituting his own personality for that of the subject and thereby diverting the mind from or lifting it above the obsession. The great Napoleon said that the only figure of rhetoric worth while was repetition. This is most effective in the form of an assurance of some future good, repeated time and again with almost the force of a command until it is burned into the very soul of the subject. In hypnotism it is only necessary for the subject to have full faith in the operator, then concentrate all the powers of his mind on some subject or to gaze steadily at some bright object until finally the objective mind is subordinated to the subjective consciousness when the subject becomes an unconscious automaton in the hands of the operator. While the busy practitioner may practice many forms of suggestive therapeutics in an indefinite way he has not the time to practice any one of them systematically. By the time he dispenses of a good sized chunk of good cheer to each of his other patients during the day the sup-

ply is usually exhausted by the time he reaches his psychoneurotic patients. The result is that many of them drift into the hands of charlatans. In many cases, even where physical disorders have been entirely cured by the physicians, yet owing to long suffering the mind fails to respond at once to the changed conditions and needs treatment, chiefly by a change of environment. If this is not forthcoming the sufferer becomes despondent, loses faith in medicine and finally comes to look to the mysterious or supernatural for aid and straightway sends for the miracle worker who is given all the credit for the cure. A legitimate field of usefulness, for an intelligent conscientious specialist, properly equipped for psycho-hydro and electro-therapeutic treatment with massage and a judicious use of medicine, has therefore been opened up in nearly every large community. If at the time the late Mrs. Eddy was suffering from nervous prostration, neurasthenia or hysteria, as the case may have been, could have availed herself of such an opportunity as this the chances are that she would not have been the founder of a new religious cult. What is even better, however, than so many specialists, is that each physician adjust his training and treatment to the various psychic and physical needs of his patients. He need not be so etherial as to become enveloped in mysticism nor need he be so material that he can see good only in drugs and scalpels. Indirect suggestion is usually preferable to the direct method and the least stress placed on the psychic phase of the treatment the better for the patient and the public. It is not more psycho therapy, but a profound realization that a man is a mental as well as a physical being and that when the body is sick the mind is usually sick also that is needed. The whole question resolves itself into one of placing the mind and body in the most favorable position for receiving helpful influences, medicinal or otherwise from without and for a healthy reciprocal action between mind and body. The argument that only great masters in medicine, profound searchers after physical and psychical truths, are capable of treating the mind is the strongest argument in favor of more masters and fewer imitators. The unfortunate tendency of many physicians, however, who have heretofore taken up this special line of work, to drift into irregular practices has been largely due to the unfriendly attitude of the medical profession itself. But the time has now come when the profession owes it to itself and the public to step into the breach and claim the exclusive right and assume the responsibility of treating all physical and mental ills. Whatever be the cause there is no longer any question but that the great army of sufferers from nervous and mental affections that flock to charlatans, crowd health resorts and sanatoria, to say nothing of the one hundred and fifty or two hundred thousand confined in the insane asylums in the United States or the many other thousands who are suffering from dangerous mandatory delusions demand the most serious consideration of the profession and the public. The fact that from thirty to thirty-five thousand inmates are now in the insane asylums of one of our great states and that the proportion according to population is slightly less in other states, is, to say the least, appalling. If taken in their incipency thousands of these cases

could be saved from becoming nervous and mental wrecks. Moreover, if the public were properly informed by lectures and literature of the causes of these insanities and neuroses many other thousands might be prevented. Comparatively few of the laity fully realize that the vast majority of these insanities are the result of bad heredity, alcoholism, syphilis, head injuries and social and business perplexities or that the multiform neuroses, hysteria, neuristhenia and psychasthenia, owe their origin chiefly to bad heredity, bad hygiene and to unnecessary worry. If the members of the medical profession, the usual faithful guardians of the public health, have been derelict in any one single duty it has been in their apparent indifference to the underlying causes of these nervous diseases and to the rank imposition that is being constantly practiced upon the credulous public by non-medical pretenders in the treatment of these diseases. It is not claimed that we have devoted any more time to surgery, microbes and the infectious than the importance of these subjects demands, but it is evident that we have not devoted the time to these nervous and mental diseases that their importance demands. We have had numerous tuberculosis congresses and tons of literature on the subject of the white plague but until quite recently public attention has scarcely been called to the alarming prevalence of these nervous and mental diseases. Our medical text books speak in no uncertain tone as to the part played by alcoholic liquors, syphilis and bad heredity in the production of insanity, yet the profession as a whole has entered no protest against the liquor traffic, the legal maintenance of dens of vice where lurk the germs of social disease, or of the marriage of the physically and mentally unfit. Parents and teachers are lectured and drilled ad nauseum in regard to the danger of microbes but little is said to them of the foundation for the nervous instability of the race that is being laid in the home and the school. We hear much of the re-education, as a cure for individual sufferers from nervous affections but little of the re-education of the public for the prevention of these diseases. "Take care of the body and the mind will take care of itself," is a maxim that applies with special emphasis to the nervous system. It is in the intelligent appreciation of individual possibilities and responsibilities that the mind gains its chief victories for the body. Indeed, it is the way that it discharges its sacred trust committed to its care, the intelligent understanding of the laws of development, of hygiene and the conservation of energy, that the mind proves its greatest loyalty to and renders its greatest service to the body. In this way it becomes the body's true magician and miracle worker. Although the mind may still lift a despondent soul from the slough of despond, the high and exalted mission of the mind is to lead the whole race over the elevated table lands of good health and good cheer. It is in the intelligent optimistic expectancy, the confident step, the upright position, the expanded chest and dilated nostrils scenting God's pure air, and driving life's crimson fluid through all the organs and tissues of the body, and not in seeking sorceresses crouched in dark corners that the mind comes into its own.

THE SUCCESSFUL OBSTETRICIAN.

By Dr. G. R. Gordon, Wagoner, Oklahoma.

Another year has passed and we meet again in annual session to exploit our opinions on subjects relating to obstetrics and gynecology.

This association is composed of men trained especially in these departments, and the purpose of this meeting is to glean from the experiences of our associates the advantages that have taken place during the past year in affections in these especial fields, and to herald them to the world through the medical press and our transactions, for the benefit of the human sufferer.

As torch bearers we should proceed with such thorough preparation, and caution that all who read may be profited.

The recommendations here made should tend by their precepts to lessen suffering and prolong lives.

With the advent of bacteriology came a new school whose knowledge was founded on facts, not theories, and like the mariner who consults his compass, had known law to direct them.

The field of gynecology, the pelvis, with the abdomen appended, was their hunting ground and like an army marching to victory, the field was soon won. Now, all the organs of these cavities have felt the results of advancement, and have yielded to their pathology abundantly; aye, and not pathology alone, for the organs of this casket have been maimed and sacrificed in their healthy state for reasons at times that would have shocked Hippocrates; and it should arouse each one of us, as it is the purpose of this association to advance the knowledge of obstetrics to its highest scientific attainments. The successful obstetrician must know the relation existing between the mother, the foetus, in its growth and development, as well as the mechanism of labor. It is only by thorough investigation and experience the accoucheur acquires a knowledge of this relationship. Perhaps, after all, the word "Empiricism" is the panacea.

Not only those that are doing special work in obstetrics, but the general practitioner as well, are looking to us for the solution of unsettled questions in the departments this association represents. In the obstetrical art, marked results have been obtained through the knowledge of infection. From a heavy death rate following confinement from these cases, the technique carried out by the thoughtful, wide-awake obstetrician has largely eliminated the mortality. Among the uncleanly and careless physicians, the death rate is still appalling, showing, if any, but slight improvement since the etiology

of infection has become known. This should cause us to pause and inquire why these conditions exist, and if there is not a remedy.

The hospital environment having nearly eradicated puerperal disease through asepsis, the known cause in general practice is the lack of general asepsis. The solution resolves itself into knowledge or ignorance, cleanliness or filth, in the care of the parturient. Investigations prove that the greatest source of infection is introduced into the birth canal through the vagina; the germs lurk about the vulva of the patient, or on the hands of the attendant. From the vulva they are carried in by examinations and, if on the hands of the attendant, through inattention to the known laws of asepsis. Williams says "the greatest advancement in the department of obstetrics, is the elimination of vaginal examination and the recognition of pregnant conditions through external means; that a more thorough diagnosis can be made by these methods than any other, and the danger of carrying infection by digital examination is eliminated." The mortality attending confinement must diminish, for the medical man of the present has the knowledge of prevention of infection, and only carelessness or indifference can be his excuse. The attendance upon this class of cases by incompetent mid-wives, and the high mortality attending their service, is a reflection upon the medical profession, though there is no uniform law of requirement for mid-wives in this state. It is to be hoped that legislation will soon correct this great source of wrong. Child bearing, the greatest industry of human existence, should be protected by every known means and not only attendants be required to know the laws of asepsis, but should be held accountable for their practise.

There is still another means of contamination; many women at the approach of parturition, are taught to anoint themselves or use douches. These practices are unnecessary and unsanitary, often harmful, and may even be the means of fatal termination. The lubrications will only benefit through mental-therapy, and the use of the douche, which is so commonly practiced with all classes, can be an agent for good only when advocated by the physician for diseased conditions. Nature is so kind in providing the vagina with germicide action, that it may be questioned if the douche ever benefits.

We owe much to Pasteur and Lister for the knowledge of germ diseases and their treatment, but as a prevention is not always possible, he who introduces a means of positive cure in these affections deserves a still greater reward. Serum-therapy offers much and may be the means of solving the problem; with a known etiology, our faith tells us time will produce the master hand, but until then every method of arresting infection should be practiced..... the greatest known means is prophylaxis.

The successful obstetrician prepares the puerperant according to the rules of modern antiseptic procedure at the beginning of labor, in that the vulva, and genitals are cleansed with soap and water; and that his patient has had a general scrubbing bath. Especial care should be given to cleansing the inside of the thighs and the folds and creases of the skin and that, follow-

ing the bath, the parts, from the waist down, have been bathed with a 1:1000 solution of mercury bi-chloride. Also that during the process of labor, the vulva should be covered with a towel wrung out of the same solution. The obstetrician should train himself to secure all possible information as to the progress of labor from palpation, auscultation, and intelligent observation. When an internal examination is made, the hand should be thoroughly cleansed or covered with a sterilized glove and the vulva separated prior to the introduction of the examining finger. It is a very grievous mistake for doctors to put on a sterile glove and then arrange his patient. The nurse should never be allowed to make internal examinations, at any time, without direct request of the physician. The evidence derived from numerous and careful investigation favors the conclusion that the normal vagina is free from micro-organism, and that the vaginal secretions are fatal to them, with the exception of the gonococcus. So it may be assumed to be true that all infection of the genital tract is caused by either the nurse or the doctor. This being the case, it is readily seen how the infection may be carried to the upper vagina where it can easily enter the uterus, or be absorbed through the broken surfaces of the mucous membrane. If the accoucheur would but keep in mind the fact that there is essentially no open canal extending from the vulva through the vagina, up to the uterus and through the tubes to the peritoneal cavity, he would rarely neglect the essentials of asepsis.

In cases where suitable light and assistance is at hand, all laceration of perineum and lower vagina should be repaired immediately after labor. If, for good reason, this can not be done at the time of delivery, it should be done within the twenty-four hours following. Where instruments have been used if there are lacerations of the cervix, if possible they should be repaired at once.

It prolongs the use of the anesthetic but a few moments to do the necessary suturing, and, by sewing up the tear, thereby closing the bleeding vessels, we save the patient from the loss of blood and restore the uterus to a condition by which convalescence is hastened. Most of the cases of so-called "Postpartum" hemorrhage are due to a lacerated cervix, and I believe, the same rules should apply here as in other regions of the body.

After inspection of the outlet is made and all necessary repairs are completed, the parts are cleansed with a 1:2000 solution of mercuric chloride, pored on from above and allowed to run down over the vulva. The washing is completed with cotton sponges rung out of the same solution. All dressings should be of sterile gauze or cotton wrung out of a 1:4000 solution of mercuric chloride. I remove all soiled clothing with the draw sheet, supply a clean gown, and leave patient on back with head low. She should not be allowed to turn on side for a few hours and but very little for two days. Rest is very essential after so trying an ordeal and everything conducive to quietness should be carried out. The baby should be removed from mother's presence, room darkened and all visitors excluded. No other than the husband and the mother should be allowed to visit the patient while she is in bed.

There should be no douches, vaginal or uterine, as there will be no cause for either if the delivery has been accomplished under aseptic precautions. There is no part of labor that requires more precaution and asepsis than the removal of the placenta. It has been my custom to give one teaspoonful of ergot as soon as the baby is removed; and in fifteen or twenty minutes use a little gentle massage over the uterus, have my patient make some expulsive efforts, and using the cord as a guide I have very little trouble in removing placenta intact. A close inspection of the placenta, after its removal is of vital importance as neglect at this point may cost the life of your patient.

Gentle massage of the uterus through the abdominal walls will facilitate its contraction and cause the expulsion of retained membranes, blood clots or other debris and assist in that process so much to be desired, an early normal involution of the uterus and adnexa. Keep the vulva and external genitalia well cleansed with a 1-2000 ly-chloride solution and covered with sterile cotton or gauze. Change dressings as often as necessary.

The nurse should keep a complete chart noting all the conditions and peculiarities of the patient, in order that the physician may know at the earliest moment should any retrogressive change take place. At each of the physician's visits the height to which the uterus reaches above the symphysis is noted, its sensitiveness and contractibility are determined by abdominal palpation, care being taken to ascertain at the same time the condition of the adnexa, especially with the view to the early detection of any inflammation occurring. If the uterus is found tender, relaxed or flabby, the physician's hand is applied to the abdomen, massaged with gentle strokes instituted and continued until the organ is found to contract and soreness removed. This enables you to ascertain the size and condition of the uterus and enables you to apply appropriate treatment at one and the same time. I find massage the best treatment for suppressed flow and the safest way to remove blood clots. It also adds largely to the comfort of your patient. It is a routine procedure with me and as previously mentioned, it hastens involution. In the way of drugs to promote this, ergotin with the addition of strychnine will be found valuable. If the after pains are too severe I use codeine. The amount and condition of the lochia should be carefully noted at each visit, and when appreciable diminution is manifested, it should be corrected at once. Any marked rise of temperature after the second day ought to cause a suspicion of infection, and investigation should be instituted. When the temperature reaches 102 F. the lochia should be submitted to a bacterial examination. After the specimen is secured, the uterus should be examined with the sterile index finger and the tubes and the appendages explored. If the uterin cavity is smooth, sterile water or saline douches should be given at once, but if the uterus contains debris this should be removed with the finger before washing out. The curette should never be used, and I rather think antiseptics are contra-indicated. When the infection has extended beyond the uterus local treatment should be discontinued. Measures which

will keep up the strength of the patient, such as general tonics, are most valuable and alcohol and strychnine in large doses are the most valuable drugs for this purpose. High fever is to be combated with cold sponges or baths. Saline solution per-rectum should be instituted early. When parametritis or peritonitis exists, ice bags should be applied in the early stages. Later dry or moist heat, to the lower part of the abdomen will be of great service. Abscesses or pus-tubes should be opened early, and if possible through the vagina.

The condition of the bladder of the puerperant should be noted carefully, as retention of the urine following labor is frequent. The patient should not be catheterized until all efforts have failed to cause her to urinate. She should first have hot applications applied to the region of the bladder and hot sterile water poured over the vulva and applied to it by means of wet cotton or gauze, and an enema should also be given. Gentle pressure should be made over the bladder, and the patient raised to a sitting position on the bed pan. A sterile catheter should be passed as a last resort but the bladder should be emptied every twelve hours. The balsams, such as copaiba or sandalwood, should be given in three to five drop doses in capsules, four times a day. When this process fails to yield to this treatment, daily irrigations of the bladder with a two per cent solution of boric acid, should be practiced in connection with tonics and stimulants. The parturient should be given a laxative at the end of twenty-four hours after labor. Castor oil is possibly the best. The diet should, in some measure, be suited to the condition of the individual case, its character depending somewhat on whether or not the patient has lost a large amount of blood. Ordinarily, a diet consisting of milk, broth, weak tea, cocoa and simple soups, with the addition of milk toast, soft boiled or poached eggs, and any breakfast food, if thoroughly cooked, is suitable for the first few days. The breast and nipples should be carefully looked after and properly treated. All who practice obstetrics should be able to thoroughly appreciate the value of time as the great factor in success. Let nature have her way. Not until the uterus is restored to its normal position, and all lacerations and weakened parts incident to parturition have been repaired can the parturient be considered free from medical care. In this age of automobiles and air ships there is a tendency to haste, to rush along, "hurry" up things, and the doctor, imbued with the spirit of the age, is likely to hurry the process of labor by applying instruments before nature has had sufficient time to complete her work. In obstetrics, the passenger, and the highway of travel have always been the same, and there is little likelihood of either being changed. Experience teaches that, as we become more civilized, cultured and refined as a people, the slower and more difficult child bearing becomes. The two factors of the most vital importance in the lying-in room are cleanliness and patience. In conclusion, I would suggest that the most important elements in the treatment of the puerperant are strict asepsis, the restriction of internal examinations to the minimum, careful massage of the uterus daily for the first two weeks; to assist involution, the making of all necessary repairs of the

weakened and lacerated parts early, and the prompt restoration of the uterus, if displaced, to its normal position, keeping it in place by means of some support until it will be retained in its position. If these measures are carried out we shall hear less often from the patient the complaint: "Doctor, I have not felt well since my baby was born."

"THE VALUE OF UTERINE HEMORRHAGE AS A SYMPTOM."

By Dr. J. A. Hatcher, El Reno, Okla.

Much has recently been written regarding the relation of uterine hemorrhage to uterine cancer and propagandas have been sent out to both the profession and the laity urging them to give all cases of unusual uterine bleedings the most careful attention as a neglect of this precaution has resulted in the loss of the lives of many women that could have been saved by a more prompt detection of the cause of their hemorrhage and its removal. My attention was especially directed to the importance of this subject by the perplexity, confusion and doubt arising in my mind, in my efforts to determine the cause of several obstinate cases of uterine bleeding during or near the time of the menopause. The most frequent time of these hemorrhages is also the most usual time for the appearance of uterine cancer, when to make a mistake is mortifying to the physician and most disastrous to the patient. Uterine bleeding, like dropsy, cough or diarrhoea, is but a symptom and upon first consideration it may seem out of place to make a symptom the basis of a paper; but when we consider the results arising from degenerative changes in the uterine musculature, arterio-sclerosis of its blood vessels and changes in the circulation of its mucosa with the many local causes of uterine hemorrhage as well as general, emotional and vascular causes conspiring to produce this symptom we can not but realize that a special consideration of this symptom tracing it back to its many causes and striving to understand those causes will reward us by giving us clearer conceptions of pelvic pathology. It is certainly true that the cause of many bleedings occurring at the menopause is quite difficult or even impossible to determine as we are told by the best authority that there is no evidence of an anatomic change in the uterus or its surroundings to account for many of them; but while this may be true we can differentiate these hemorrhages from those having a dangerous anatomic basis—as uterine cancer.

What is the cause of this uterine hemorrhage? must be a question the physician often meditatively asks himself both at the bedside and in his office and the timely and correct answer to this question must be a matter of considerable solicitude to himself and of no small value to his patient. Fortunately, in the large majority of cases the answer to this question is forthcoming after a more or less extended examination into the features of the given case.

Right here I wish to put the strongest emphasis on the importance of a thorough examination of all pelvic cases that present symptoms of any clinical importance, especially one with a history of menorrhagia or metorrhagia. To treat such cases without a careful local examination is very bad practice. It might be thought that these precautions were too elementary to

deserve mention; but I assure you the practitioner is accused of carelessness in this regard by the cancer hospitals of our country who claim that many advanced uterine cancer cases come to them with a history of having been treated by their physician without a local examination. They claim that the history of many of these forlorn cases are simply histories of neglect and that the profession needs education along this line as well as the laity. The office of every physician, however humble, should be conveniently and appropriately arranged for these examinations and they should be frequently made.

Normal menstruation and the bleeding incident to a normal labor are the only physiologic uterine hemorrhages. All others point to some pathologic condition either local, general, emotional or vascular in origin. A normal menstruation may be defined as a bloody discharge from the uterus coming once in 28 days and lasting from 3 to 7 days, the amount of discharge ranging from 2 to 8 oz., the time consumed and the quantity of the flow varying according to the individual menstrual habits of the woman. Most women, even those of low intelligence, readily detect any departure from their normal menstruation; hence the solution of the personal equation of a typical or atypical menstruation can be arrived at with quite a degree of correctness. It is well to bear in mind that every atypical menstruation points to some pathology of either trivial or grave importance and then make an effort to discover that pathology. Is this given menstruation a typical or an atypical one is a good question for the physician to ask himself and then proceed to collect the facts in the case to prove the one or the other. If the menstruation is found to be atypical, an effort made to find its cause though unsuccessful will result in an increase of the diagnostic ability of the one who makes the effort.

The estimated quantity of hemorrhage incident to a normal labor is from 1-2 to 1 lb. and any appreciable hemorrhage exceeding this quantity should be considered as having passed the physiological limit into a post-partum hemorrhage. The amount of blood passed by the primipara is generally less than mentioned above this being due to the perfect action of the nice adjustment of the muscular and elastic fibers of the primiparous uterus that gradually loses this ideal mechanism as a consequence of repeated labors. Maud Muller's child bed pains left their traces upon the contractile power of her uterus as well as upon her heart and brain. If the primipara has after pains the physician thinks it strange; but he knows by experience that many multipara dread their after pains more than they do their labor pains. The relaxed and deranged multiparous uterus allows the blood to collect in its cavity and vessels and by the irritating presence of this blood the after pains are produced.

All hemorrhages of pregnancy are pathological and should receive careful attention. The principal causes of such hemorrhages are (a) abortion, (b) ectopic gestation, (c) placenta praevia, (d) premature separation of the placenta, (e) new growths including cervical cancer which can coexist with

pregnancy without producing abortion. The hemorrhages of abortion are those most often met by the practitioner. Just the per cent of pregnancies that end in abortion can not be estimated; but the uterine bleedings incident to the early months of pregnancy are very common. Abortions often pass unobserved in young married women. If remnants of conception remain in the uterus active bleeding or dribbling of blood will continue for a variable length of time. A case of this kind came under my observation in which bleeding was almost constant for 8 months. The patient was nearing the menopause and no history of pregnancy could be elicited. A diagnosis of cancer of the corpus was thought of. It was found, however, that a blighted pregnancy was the cause of this long drawn out symptom.

Given a patient who is a married woman with two or three children, the youngest between 1 and 2 years old; menstruation regular and natural up to a certain time when from some cause she missed one or more periods and then began to flow, it is well to assume that she is pregnant until it can be proven by good evidence to the contrary. The practitioner knows well the dread such a woman often has for pregnancy and how common self produced abortions are; hence he should ever bear this in mind as a probability without accusing the innocent.

More than usual interest should be taken in the diagnosis of ectopic gestation for I am sure that in making a close analysis of all the symptoms of this important disease and arriving at correct conclusions the profession has not reached the degree of efficiency in the diagnosis that it should enjoy. I can look back and see where I have failed largely for want of a well directed effort.

There are several reasons for this: First: We are not looking for or expecting to find a case of ectopic gestation and we are not apt to find the thing for which we are not looking. When a doctor puts himself in the mental attitude of looking out his expanded diagnostic vision surprises and even delights him. Secondly: We have the impression that ectopic gestation is of very unusual occurrence which we can never meet often enough to know much about, when in fact the man with an ordinary practice may meet one or more cases in a single year and one case carefully studied worried over and wrongly diagnosed makes us wondrous wise as to future cases. All can well remember his first case of puerperal eclampsia and equally well will he remember his first case of ectopic gestation. While the treatment is almost purely surgical it falls into our hands first, hence our responsibility to know and do the right thing at the right time.

Now, atypical menstruation or metrorrhagia is a most important symptom of this condition and our ability to make a diagnosis hinges largely upon the careful analysis made of the symptom of bleeding and its closely related symptom of pain.

The misfortune is that the physician seldom has a chance to study a case of ectopic gestation during the period of its early symptoms as many

cases are up and about most of the time for days and even weeks not thinking themselves sick enough to go to bed and call a physician. I once had a case to visit my office with a large hematocele in the posterior culdesac forcing the uterus forward against the pubes. In nearly every case there is time for the physician to study the first symptoms as they unfold, but he is often denied the opportunity.

Illustrative case: Mrs. B., age 26, married 10 years, puberty at 11; four children, oldest 9 years, youngest 11 months. Began to menstruate when a babe was 4 months old and had her last natural period Feb. 12, 1910. She went 10 days over her time in March, 1910, and on March 17 she was taken with a violent pain in the right side of the pelvis, followed soon by a slight gush of blood from the vagina. The next day she got up, felt fairly well, did her house work, flowing slightly all day and the next day she went two or three miles to town, did some trading, flowing slightly all the time. The next day, March 20th, she felt well enough to be up and on March 21st she felt well enough to do her washing and was taken suddenly with a pain in the right side of the pelvis worse than she had March 17th. After this she concluded to have the doctor and on March 22nd, the next day, she got up and tried to get breakfast, was driven back to bed by pain and increased vaginal flow, four clots passing that resembled blood March 24th, two days after she first noticed an enlargement in her pelvis to the left of the median line of the abdomen and the pains then shifted to that side. March 29th the doctor aspirated the posterior culdesac, draining off more than a pint of dark blood.

April 4, 1910, she entered the El Reno Sanitarium in the following condition: Well nourished, pulse 120, volume weak, tumor the size of a cocoanut just above pubis, mostly on left side; tenderness on palpation, cervix pointing back to sacrum, fundus pushed forward and to the right by the tumor, posterior culdesac bulging. On April 25th she was operated on by Dr. Arnold and made a good recovery.

Cases of ectopic gestation in which the patient is brought suddenly to a very grave condition by extensive hemorrhage and profound shock are not often seen as they are very rare and the physician in nearly every case has plenty of time to study the advancing symptoms if he only had the opportunity and would take advantage of it.

Uterine hemorrhage and the passing of the decidua is caused by tubal rupture, tubal abortion, tubal hemorrhage or the death of the embryo and may continue irregularly for days or weeks attended by the colicky pains caused by bleeding into the tubes or the peritoneum.

The rule of Philander Harris should be in the mind of every physician.

"When any woman after puberty and before the menopause who has menstruated regularly and painlessly, goes four, five, six, eight, ten, fifteen or eighteen days over the time at which menstruation is due, sees blood from the vagina differing in quality, color, quantity or consistence from her us-

ual menstrual flow, and has pains generally severe in one side of the pelvis or the other, or possibly in the hypogastric region, ectopic gestation may be presumed.

Twenty-nine out of every thirty cases of ectopic gestation present symptoms by which a presumptive if not a reasonably certain diagnosis may be made prior to the patient's arrival at the condition that is alarming. Most cases present a group of symptoms preceeding the tragic stage of the disease sufficiently distinctive to warrant a diagnosis and since these symptoms are in no way alarming they are called the non-tragic symptoms of ectopic gestation.

So many pelvic conditions cause uterine hemorrhage that it is estimated that one-fifth of all gynecological cases treated at the clinics have uterine bleeding as a symptom. It is pleasant to note that our recent authors of text books are emphasizing the importance of this symptom by making it the basic symptom in the classification of a group of the most important pelvic diseases and by giving it separate and specific and extended consideration.

The following are the local causes of uterine bleeding, not mentioned before, that most interest the practitioner and will probably include the causes of practically all the uterine bleedings coming under his observation: (a) Uterine polyps, (b) fibromas, (c) carcinoma and sarcoma, (d) salpingitis, (e) endometritis, (f) bleedings at the menopause, peritonitis, (g) subinvolution and (i) chorioepithelioma. Uterine polyps are extrusions of the normal mucosa and their bleeding may manifest itself as an exacerbation of the usual flow at the period, or there may be a slight discharge of blood between the periods of a continuous dribbling character. If the polypus is situated high up in the corpus its diagnosis may be quite difficult but fortunately its attachment is usually in the cervical region and it is most often found protruding from a dilated cervix hanging by a pedicle.

The bleeding caused by uterine fibroids depends upon the location. If they are submucous projecting into the uterine cavity or pedunculated fibroid growths within they are usually the source of considerable or even dangerous hemorrhage.

If interstitial the symptom of hemorrhage is not so apt to be pronounced and may even be absent, and if subserous though quite large it is rare for them to be the cause of hemorrhage. The fibroid itself contains few vessels, being composed mainly of dense fibrous tissue; but the adjacent encircling zone of connective tissue is rich in blood vessels and when this zone is just beneath the uterine mucosa or even projecting into the cavity the hemorrhage is usually severe.

The presence of a fibroid within the uterine wall prevents its efficient contraction, stiffens its wall, thereby conducing to hemorrhage, congestion of the edometrium and the formation of blood clots.

Hemorrhage is generally absent in pyosalpinx and always present in ectopic gestation, this fact being an important differential point between the two conditions.

Abnormal hemorrhage is practically always the first symptom of uterine cancer during menstrual life. It is also the symptom of greatest importance in the early recognition of uterine cancer.

No woman with this condition will long give a history of natural menstruation. Hence, increased menstruation and inter-menstrual blood losses should be watched by the practitioner with a care commensurate with their importance. By blood losses is meant a mere spotting, a light dribbling or a sudden gush. It is only in this way that dangerous conditions can be early suspected and this suspicion put to the test of a pathological examination of a scraping from the endometrium or a wedge of tissue from the cervix. Every physician should have a faithful and competent pathologist to whom he can refer for examination his takings from endometrium or cervix. But prompt action must be instituted by the laity as well as by the physician as we know that many cases of abnormal uterine bleeding do not come under the observation of the physician for months or more than a year. How many times have physicians examined these cases for the first time to find a crater-like cavity at the cervical site? What are the reasons for these delays on the part of the laity? First: In years past the idea was stamped upon the mind of the physician and largely communicated by him to the laity that the irregular and profuse hemorrhages incident to the menopause were a necessary evil, and inconvenience of that period that had to be endured. There is always a basis of fact in an idea that takes deep hold on both the mind of the profession and the laity and we as physicians realize that the cause of many abnormal uterine bleedings is very difficult to ascertain and that no positive explanation has been given as yet for many blood losses of the menopause.

Our forefathers, though deprived of many of the advantages that we enjoy, were not fools. They had the opportunity to study women before the woman with an issue of blood followed Christ to be healed and they had observed that many women passed through the menopause, had her bad and irregular hemorrhages the allotted time and came out on the other side sound and well. So common was this experience that they came to regard this phenomenon rather physiological than otherwise. The few exceptions to the rule where death lurked in this issue of blood from the womb had not impressed them with the fact of the relation of these hemorrhages to uterine cancer, and the doctrine of early extirpation of cancerous growths afforded a bright prospect they did not know.

Secondly: Fearing to know the truth, from the horrors of which these patients and their friends recoil, the modesty and secrecy peculiar to women regarding their sexual ills, and a morbid dread of surgery are retarding factors as well as a want of knowledge.

The physician's responsibility in relation to uterine hemorrhages is such that he can not afford to be careless or indifferent. It is his duty to act in the capacity of an educator and an adviser of the laity so far as this can be done within ethical limits. He meets people very frequently whose ideas regarding this subject are very crude—those who attach little importance to an abnormal uterine bleeding, regarding it a natural consequence of the change of life or a trivial irregularity of menstruation. Many of these people repose the utmost confidence in his judgment and what he says they believe and act upon; hence, the combined influence of the profession may become a power for good. Whenever a physician has a case with symptoms of metrorrhagia between the ages of 32 and 55 the responsibility at once falls heavily upon him to watch that case. It is my rule of practice to take a carefully written history of such a case followed by a searching local and general examination and if I am doubtful regarding the diagnosis I request the patient to call again at stated intervals for future observation.

Many years ago the death of a case of carcinoma of the uterus was charged up to my carelessness. Whether guilty or not the accusation made a deep impression on me and the charge has not come against me since. If the patient refuses an examination and just wants you to give her a tonic it is best to politely refuse to treat her if you can not by your personal influence convince her of the benefits of an examination.

In this field of labor the physician by reason of numerous difficulties has a task to perform. The following are some of them:

- (a) The cause of many abnormal hemorrhages is hard to ascertain.
- (b) No cause can be given for many blood losses of the menopause.
- (c) Many women are irregular in menstruation.
- (d) The menopause differs very much in its manifestations not being alike in any two women.

Admitting the truth of the above facts we can, by care in the use of the recognized means of diagnosis, differentiate those having a dangerous anatomic basis from those having none.

Our recent works on gynecology tell us that these hemorrhages are due to degenerative changes in the uterine musculature and in the uterine vessels; a fibrosis of the uterine muscle and an arterio-sclerosis of its blood vessels rendering the uterus so insufficient in contractile power that it can not handle the blood sent to it by the trophic influence of the secreting ovaries.

When such hemorrhages occur and we can find no local causes for them as cancer, fibroids, polyps, fungoid endometritis and etc., we are told that we may reasonably conclude that one or all of the following causes are present:

- (a) Degenerating muscular fibers of the uterus poor in contractile power.
- (b) An increased amount of fibrous connective tissue.
- (c) An increased amount of elastic fibers thickened and brittle.
- (d) Arterio-sclerosis of the blood vessels.

EDITORIAL

JANUARY THE PUBLIC HEALTH MONTH.

The various organizations throughout the country having the advancement of the Public Health at heart have come to almost universally regard January as the month in which a concerted movement is to be made over the country for the advancement of their propaganda. It is very wisely selected as to time, for many of our acute contagious diseases, especially in children, are very prevalent at this time and consequently our attention more forcibly called to them than at other times.

The Women's Clubs of the country are demanding an intelligent course of instruction and offering their co-operation in the matter of prevention and we should meet them in the spirit they come and give our best knowledge of the suppression of disease to them and thus fulfill one of the most important functions of the modern physician.

Every County Medical Society in the State should devote a meeting to the devisement of plans along this line and should select those most fitted for the work among their number to address the public on disease and its prevention. When the people understand that the profession is giving its time and knowledge to the prevention of disease as well as to its treatment the physician will then be elevated to his true level of a humanitarian and such a course will also go long towards the prevention of the growing idea in many minds among the laity that the profession is a union or trust seeking to foster its own selfish interests. This idea is adroitly fostered by certain organizations in the country, a dishonest fostering, to be sure, but damaging to us nevertheless, and should be counteracted.

The Medical Profession as a fact is devoting hours and weeks to its own destruction from a financial viewpoint, when they do anything toward the suppression of disease, however, it is our honorable privilege to do so and we are doing it and in doing so we enjoy the great distinction not enjoyed by any other profession. You will seek in vain for the organization in law for the purpose of curtailing and preventing litigation; you may search the osteopathic archives in vain for a chair of preventive medicine and they cannot "point with pride" to any achievement in the way of antitoxic serum for the prevention of disease. Truly this is a field all our own and we should accredit ourselves accordingly.

Dr. W. A. Evans, Health Officer of Chicago, and Chairman of the Section on Preventive Medicine and Public Health of the A. M. A., in an able address delivered at Los Angeles pointed out the importance of co-operation on the physician's part in these matters and takes the optimistic view that

in depriving ourselves of work by limiting disease we are rewarded in other ways, consoling us with the axiom that "society starves the useless and supports those who work."

It is to be hoped that our state profession will be found at the beginning of the new year doing its share to help further the cause of preventive medicine.

"SCARLET RASH" AND "MEMBRANOUS CROUP."

In one of the southern counties of the state three deaths have been reported to the County Superintendent of Health due to nephritis following "scarlet rash."

The noticeable feature of this matter is that the cases were considered, not scarlet fever, but given the fantastic name of "scarlet rash," treated as a simple eruptive disease with none of the safeguards thrown around patients with scarlet fever and with none of the necessary prophylactic measures for the prevention of nephritis used.

It should be unnecessary to remind physicians that we are fondly proclaiming that we live in the days of modern medicine, that this is the day of rationalism in medicine and no steps are taken for the treatment of disease not explainable by the cold and precise rules of science and that no treatment is left unused if indicated. One of the rules of a rational handling of infectious diseases or suspected infectious diseases is to always follow a safe course, i. e., the rational course, which means isolation of cases in which there is any possible doubt until the doubt is cleared by further developments.

Physicians who look upon a scarlet rash, followed by nephritis as being harmless are liable to find themselves in the same embarrassing attitude as the physician who insists that the disease he is treating is membranous croup and therefore needs no isolation or antitoxin.

There are perhaps no two affections as destructive in their course and sequellae as scarlet fever and diphtheria and this destructiveness can be largely explained by the fact that often the first one is considered a harmless rash, not even making that patient sick or leaving a dangerous sequellae but its very mildness allows it to go unguarded until the damage is extended to some other innocent contractor. As to diphtheria, it is surprising the number of reports coming in to the authorities giving the cause of death as membranous croup. Investigation of these cases often shows that no prophylactic measures are taken on the theory that the case is possibly diphtheria and not membranous croup, and the opinion of many good men that membranous croup and diphtheria are synonymous is forgotten or disregarded, often controversies among the consultants arise as to the diagnosis, one maintaining that this is and the other that it is not diphtheria. There is only

one safe course to follow, treat it as the worst thing possible and be safe by isolating the patient until all doubt is removed.

THE DIVISION OF FEES.

One of the most vexatious problems confronting the profession today is the secret division of fees between the operator and referring physician and the mass of matter being written on the subject, practically all condemnatory of the practice, shows the prevalence of the practice.

Stripped of the surrounding features these cases are reducible to simple lines.

Any secret arrangement for fee division between physicians is to be condemned for the very reason that it is secret and that the participants do not want the division to come to the knowledge of the patient.

The patient pays the money and has a right to know who it goes to and for what he pays. Any other arrangement is lower than common commercialism (somewhat similar division of fees or rebates of rates as in railway matters is even prohibited by law).

Fee division must always face the suspicion of giving work to men who cannot secure it except by underbidding their fellow operator or of giving it to those who fear to allow their work to stand on its own merits.

The division of fees or knowledge on the operator's part that the referring physician expects a reward for bringing the patient to the operator is almost sure to produce unnecessary and useless surgical work for the operator in order to hold the work of the physician will allow his judgment to become clouded and do the patient oftentimes an injustice in operating. These practices will necessarily blunt the consciences of both parties eventually to the extent that they no longer occupy the judicial position a physician or surgeon should occupy.

No physician or surgeon should allow himself to do anything in the way of splitting his fee or rebating that he would not willingly have his patient have full and complete knowledge of. It is questionable if ever a joint bill should be rendered; each man in the case should stand on the high plane of respectability, render a bill for the services rendered and insist on payment, any other system savors too much of the tipping system among boot-blacks and cab men and reduces the participants to a position they would be ashamed to be found in by the public.

THE DUKE SANITARIUM.

One of the pleasant functions of the Editor is that calling him to explain the errors of proof reading, etc. Our last cause for back peddling is apparent in the error in the advertisement of The Duke Sanitarium, Guthrie, in which Dr. John Punton of Kansas City is hoisted willy nilly into the position of Conductor of Dr. Duke's Sanitarium.

We take this manner of saying that Dr. Punton has no connection with the Duke Sanitarium and regret that the error crept into type.

ANTIDIPHThERIC SERUM AND GLOBULINS.

In their current announcements to the medical profession it is noted that Parke, Davis & Co. give equal prominence to their antidiphtheric serum, which they have produced unchanged for many years, and the newer "globulins," which they have been marketing for a number of seasons.

The globulins, as is perhaps known to most practitioners, is antidiphtheric serum with the non-essential portions eliminated. Compared with the normal serum it provides a corresponding number of antitoxic units in lesser bulk, permitting in consequence a smaller dose, which probably accounts for its apparent growth in favor among physicians.

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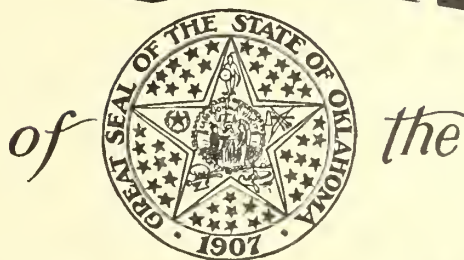
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*ANKYLOSTOMIASIS.

By Dr. A. C. Hirshfield, Norman, Oklahoma.

Ankylostomiasis or Uncinariasis or Hook-worm disease is a subacute or chronic pathological condition characterized by symptoms caused by the presence, in the intestinal canal, of the worm *ankylostoma duodenale*, and *Uncinariasis duodenalis* or *Uncinaria Americana*. As intimated above the American hook-worm is not quite the same as that organism found in foreign countries. For our own worm Stiles has suggested the name, *Necator Americana*.

Historical—How long Uncinariasis has existed no one knows, but there is every evidence to believe that it is a very old disease. In 1838, Dubina of Milan, Italy found Uncinariasis in the intestine of a girl who had died of a progressive anemia. In 1851, Griesinger declared this worm to be the cause of Egyptian chlorosis. But the clinical importance of the parasite was not recognized until 1882, when Perroncito showed that the epidemic of the so called Miner's Anemia which occurred during the building of the St. Gothard tunnel was due to this parasite. Then in 1894, there was an extensive epidemic among the miners of Belgium, the infection having been brought in by

Read in Part before the Cleveland County Medical Society, October 5, 1911.

the Italian miners who had worked on the St. Gothard tunnel. The history of the ravages of this disease in Porto Rico, being responsible for one out of every four deaths, is too recent to need detailing here. But since the American occupation of Porto Rico, this disease has been thoroughly studied by American physicians especially Drs. Stiles, Ashford and King. This work led to the recognition of the prevalence of Uncinariasis in the southern United States, which has resulted in the extensive and comprehensive investigation of the subject in the south, generously aided by Mr. John D. Rockefeller. We now know that approximately two million people in the south are rendered inefficient and more or less public charges through the agency of this disease.

DISTRIBUTION—The disease is endemic in Italy, Egypt, India, Philippines, Germany, Belgium, Switzerland and in Cornwall, England. In our country it is found throughout the southeastern and gulf states and in New Mexico, Arizona and California. The prevalence of this disease in the south may be emphasized by stating that Chamberlin in the examination of a number of southern recruits found sixty per cent infected with hookworm. Later Siler found ninety-three cases out of a hundred and five recruits or 88.5 per cent. Chamberlin, in a statistical study of uncinariasis states that from 65 to 85 per cent of all southern bred recruits are infected with hook-worm. Wells is authority for the statement that "Exclusive of the large towns, about 24 per cent of the total white population of Georgia have uncinariasis. In Arizona and New Mexico the distribution of the disease is found to follow the railroads, being brought in, no doubt, by the Mexican section hands. In California the disease is limited to, but very prevalent in the deep gold mines, the infection originating from Italian, Polish, Hungarian and other foreign miners. Uncinariasis is also found sporadically in different coal mines throughout the United States, being imported by foreign miners, especially those from Cornwall, which is a veritable hot bed of infection.

ETIOLOGY—The direct cause of Ankylostomiasis is infection by the larvae of *Ankylostoma Dnodenale* or *Uncinariasis Americana* respectively. As these two worms are practically identical they will hereafter be considered as one. This parasite belongs to the family Strongilidae of the nematoid worms. The length of the female is from 8 to 18 mm. and the width about 1 mm. The male is from 6 to 10 mm. in length and 0.5 mm. in width. Its body is threadlike with a conical shaped head and a large bell-shaped mouth surrounded by a horny capsule, and possessing four hook like teeth, ventrally situated, and two smaller vertical teeth on the dorsal side by means of which the animal fixes itself to the mucous membrane. A bulbous like swelling exists at the tail end of the female worm. It inhabits the jejunum and duodenum.

The eggs are found in muddy water, or in warm moist earth, and there liberate the embryos. These develop into larvae which soon enter the dormant state, remaining so until taken into the human stomach through drinking water, food, dirty hands, et cetera, or by the indirect route, which is more common. The usual mode of infection is through the skin of the body, especially of the feet. The so-called Ground Itch or sub-tropical Dermatitis is said to be the local manifestation of the entrance of these parasites into the body.

From the skin the larvae enter the blood stream, and are carried to the lungs whence they pass into the air-vesicles, then to the bronchus, trachea and esophagus, where they are swallowed, thus reaching the alimentary canal. Here sexual characters develop into the parasites, reproduction ensues and the ova are deposited in the bowels. They do not, however, multiply in the intestinal tract.

Predisposing Causes—(a) Geographical distribution as given above. (b) Sex—male and female are affected alike. (c) Age—Uncinariasis is confined mainly to persons between 5 and 27 years, the greatest infection occurring between the age of 6 and 16 inclusive. (d) Going barefooted or with feet poorly clad, and uncleanly habits greatly predispose to this disease.

PATHOLOGY—(a) At point of entrance—as the chief though not entire infection is through the skin of the feet, the lesion commonly known as ground itch will be described. This consists of a dermatitis, followed by an eruption of vesicles, which frequently become infected with various bacteria, producing pustules and ulcers of varying depth which may persist for a long time, and which when healed usually leave discolorations.

(b) In the intestines the *Ankylostoma* is probably nourished by the plasma of the blood, which it sucks from the vessels in the intestine walls. It is found post-mortem occasionally, in the mucous or even the sub-mucous coat rolled up in a little blood cavity. The writer recently saw a section of jejunum with several necators firmly imbedded in the walls thereof. Ecchymoses, containing little central holes, through which the blood oozes, may be seen, the result of the worm's actions. A chronic enteritis of the catarrhal type, with its typical pathology is a usual concomitant condition.

(c) General-Anemia with its resultant pathology, enlarged heart, hemic murmurs, et cetera, is the most characteristic blood picture seen. The anemia results not only from the loss of blood, sucked by the parasites, but also from a hemolysis of the blood, caused by toxins absorbed from the bodies of the unwelcome guest. Eosinophilia is always present, ranging from five to forty per cent. This of course we find in practically all parasitic diseases. The egg of the worm, about 1-500 inch in diameter, may be recovered from the stools, and occasionally the adult worm.

SYMPTOMATOLOGY—Doek and Bass in their exhaustive treatise on hook-worm disease, state that "There is probably no disease in which the symptoms are so variable as in hook-worm disease." These authors classify cases of uncinariasis according to the percentage of hemoglobin present, using four divisions, as follows:

Very mild—those with over 80 per cent hemoglobin.

Mild—those with 80 to 60 per cent.

Severe—those with 60 to 30 per cent.

Very severe—those with less than 30 per cent.

Ashford and King use only three divisions in describing these cases, viz.: slight, moderate and severe. This seems sufficient in view of the fact that a great many of the very mild cases can hardly be said to have hook-worm disease, but are really only hook-worm carriers. The latter classification I shall therefore follow.

Slight Cases—These are the cases for which the patients get the credit for merely being lazy or no account, and probably include a larger part of the so-called "poor white trash" of the south. They show a mild degree of anemia, or possibly a peculiar dirty yellow tinge of the skin, and in negroes, a pastiness. All writers agree that the normal amount of perspiration is diminished. The gastro intestinal symptoms are variable and slight, including a capricious appetite, more or less ill defined epigastric pains, and an inclination toward gaseous distention. We find a tendency toward breathlessness, tachycardia and dizziness. There is a headache, diminution in power of concentration, and possibly a general dulling of the mental faculties. The muscles are flabby, and weakness and physical incapacity are prominent. The hemoglobin ranges from 60 per cent to normal.

Moderate Cases—These cases show a marked exaggeration of all the symptoms enumerated above. The skin is very dry, with little or no perspiration. The appetite may be ravenous and perversions are common, especially the much talked of and formerly misconstrued habit of clay eating. (geophagy). We have nausea and vomiting, with more or less marked abdominal pain. The pulse is rapid and weak and cardiac hypertrophy and hemic murmurs are common. There is pain in the chest and a feeling of weakness in the limbs and joints. Ashford and King state that "Joint pains are so common as to lead to frequent diagnosis of rheumatism." There is much dizziness, tinnitus aurium, and severe pains in the head, and a marked mental depression, simulating melancholia. Needless to say, these patients are sick people, and physical incapacitation is almost complete. The hemoglobin ranges from 60 to 30 per cent.

Marked Cases—These cases are totally incapacitated if not bedfast. Edema of the extremities is present, and possible general anasarca. The gastro intestinal and circulatory symptoms are distressing. These cases include the worst forms of geophagy. Pot-belly of the worst kind is seen, and emaciation is extreme. The head and joint pains often lead to the use of large amounts of opiates, which increase constipation and mental apathy. Dilation of the pupil, and indistinct vision are common. There may be an irregular fever, and the muscular weakness amounts almost to a paralysis. Death invariably follows this stage in a few weeks or months, unless treatment is instituted.

Diagnosis.—This can frequently be made at sight, or from a general symptomatology, but the positive diagnosis can only be made by examination of the feces. A history of typical "Ground Itch" is presumptive indication of hook-worm and an eosinophilia should lead one to suspicion the condition.

An absolutely positive diagnosis, however, requires simply finding the eggs or the worms in the faeces. This may be done by simple microscopic examination or by centrifugalizing and examining the centrifugate, or by hatching the eggs in an incubator. Bruns regards the first method the simplest, but least delicate, the culture method the most delicate but inconvenient, and the method of Teleman, (Centrifuge) standing midway between. For ordinary purposes, the microscopic method suffices. A small mass of faecal material, preferably from a formed stool, is placed on the center of the slide and diluted with a few drops of water, a thin cloudy smear is thus made. With a low power magnification the egg can be made out as large oval or ellipsoid bodies from 50 to 75 microns long and a little more than half as wide, with a distinct clear space between the chitinous shell and the protoplasm. A number of slides may need to be examined before the eggs are found.

PROGNOSIS—This is usually good if proper treatment is instituted, and reinfection prevented. Cures of cases almost moribund have been reported.

Prophylaxis—This is highly important, but very difficult, for obvious reasons. This includes the cure of hook-worm carriers, proper sewage disposal, disinfection of infected areas (almost impossible) and protection against infection by clothing and especially sound footwear.

Treatment.—In the main, four remedies are advocated by various authorities, and they are in the order of their importance (efficiency and safety) thymol, beta-naphthol, male fern (*aspidium*), and eucalyptus and chloroform combined. But as thymol, properly administered, accomplishes all that can be desired, and is the safest of the quartet, we need look no further for a hook-worm remedy. But as emphasized by Shultz, more than drugs are needed to stamp out this disease. The Germans use male fern very largely for hook-worm disease, Bruns reporting 40,000 cases so treated, and with five cases of blindness. But in America thymol is a heavy-odd favorite. Ashford and King's table of dosage (thymol) now almost universally adopted, is as follows:

Under 5 years old in size, 7 1-2 grains.

5-10 years old in size, 15 grains.

10-15 years old in size, 30 grains.

15-20 years old in size, 45 grains.

20-60 years old, 60 grains.

Over 60 years old, 45 grains.

Notice that size or apparent age is the criterion used. Extreme debility may also modify the dosage.

The medicinal treatment should be preceded by one day of liquid diet, and a thorough saline purge the night before, sodium sulphate one ounce being the favorite. Starting early in the morning the thymol is given in cap-

sules or wafers, in three portions, one hour apart. Two hours following the last dose another saline purge is given. Until the saline purge has acted, nothing but water, and only a small amount of that should be taken, as it promotes absorption of the thymol. Castor oil, alcoholic beverages or any other thymol solvent should be strictly avoided for obvious reasons. This treatment should be repeated once or twice at week intervals, until the hook-worms are completely eradicated. Sunday is a very convenient day for administering the treatment. The thymol treatment should be followed by tonics, iron, arsenic, etc., and a good hygienic and dietetic regimen.

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A PLEA FOR THE RADICAL OPERATION IN HERNIA WITH LOCAL ANESTHESIA.

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Abdominal hernia is more frequent than appendicitis and excluding tuberculosis, it claims more victims than any other disease that afflicts man. It is estimated that one out of every ten to twenty individuals has a hernia of some form, usually inguinal. A person with hernia is barred from all branches of the government service as well as the police and fire departments. It is fair to assume that the man with a hernia is equally unfitted to give his family the care they have a right to demand.

The German government claims that the earning capacity of such individuals is reduced from fifteen to fifty per cent, depending on the location, size and degree of control with a truss. Many life insurance companies refuse to assure hernia subjects, others reject unless the hernia is small and easily held by a truss. Even then his life expectancy is shortened, earning capacity lessened and his usefulness to his family and the community diminished. The irritation, annoyance and physical discomfort caused by the truss is very pronounced, especially during the summer months, and at times is sufficient to seriously impair the patient's health. Patients often remark that they were unable to do a full day's work until the hernia was cured by an operation.

Jacobson says that a number of patients supposed to have been cured by a truss in infancy have a return of their trouble in adolescence, or early manhood. Macready, surgeon to the London Truss Society, states that under twelve months fifty-eight per cent of congenital hernia are cured with a truss, from one to five years ten per cent of cures occur and after five years no permanent cures are obtained with a truss. Marcy says there are four hundred and fifty thousand trusses made in Philadelphia every year.

A hernia that gives little trouble during youth may become a source of serious annoyance and danger later in life. If the pressure of the truss has been firm, both peritoneal adhesions and a gradual increase in size of the abdominal opening usually occurs. It is always difficult to adjust a truss to the fat subject so it will hold the hernia and at the same time afford comfort to the patient. Patients with hernia are always conscious of their weakness and disability; the discomfort and the realization that the truss is merely a temporary means of relief and will not cure the hernia, tends to

cause despondency and constant worry and they often become easy prey for the charlatan and quack. Besides offering no prospect for a permanent cure, it is not unusual for the individual to be confronted by the necessity for a radical cure in later years. Strangulation is most frequent between forty and fifty. Pain of varying intensity may be present in the lower abdomen for some time before a hernia is recognized. Indigestion, back-ache, fatigue on the slightest exertion, general impairment of the health, constipation and intestinal colic are symptoms frequently accompanying hernia and improperly ascribed to other causes by the patient. Heredity, traumatism and laborious occupations are the more frequent predisposing causes of hernia. Kingdon claims hereditary predisposition is present in thirty-four per cent of all cases. Lucas-Championniere believes excessive fat formation is a frequent cause of umbilical hernia. Hernia is three times more frequent in males than in females.

Even after an apparent cure with a truss, the truss must be worn for months before it is safe to discard it. The radical operation practically assures a cure in every case within two weeks, is without danger when done under local anesthesia and is one of the most successful operations in surgery.

Russell of Melbourne believes that practically every inguinal hernia, a majority of the femoral and many of the direct hernia, are due to a preformed sac or an obliterated portion of the processus vaginalis.

Coley and Russell advocate abandoning the words "congenital" and "acquired" as being incorrect and substituting the terms total or partial funicular sacs in oblique inguinal hernia, as they are practically all present at birth.

Coley says: "The term 'congenital sac' as ordinarily used, means a sac communicating with the tunica vaginalis. Hence, the sacs of all inguinal hernia in female children, even though they existed at birth, and all sacs in male children not communicating with the tunica vaginalis, are called acquired. According to this definition many sacs of unquestionably pre-natal origin are classed as acquired. In direct and femoral hernia the sacs are in the majority of cases acquired, although in a certain number of cases it has been proven that preformed or congenital sacs are found also in these types of hernia."

Hernia in children are usually enteroceles and should strangulation occur the outlook is always grave. Very small hernia are liable to strangulation by the entrance of one or more additional knuckles of gut into the sac.

While hernia in adults are usually epiploceles, we have no means of knowing how soon a given case will contain both omentum and intestine, because the majority of hernia are epiploceles, is the only reason strangulation does not more frequently occur. In irreducible omental hernia where there is an occasional descent of small intestine the prognosis is always grave, there is constant danger of a loop of bowel becoming strangulated at the neck of the sac.

Regardless of how well a truss fits, there is an ever present danger of strangulation in any hernia at any time should the truss slip while the individual engages in any form of active exercise or exertion that increases intra-abdominal pressure.

Certain diseases predispose to hernia, favor the occurrence of strangulation and unless corrected at the time of operation invite recurrence, namely, bronchitis, whooping cough, stricture, phimosis, prostatic hypertrophy, cough and constipation.

Eccles says: "The radical operation for inguinal hernia is now well established, has a very low death rate, is very highly successful, and renders a large number of the members of a community fit to take their place as useful citizens."

At the best a truss is always irksome, tends to form adhesions rendering a later operation difficult, consequently, recurrence is more frequent where a truss has been worn for a long period previous to operation.

The high percentage of recurrences that followed hernia operations before the advent of the Halsted and Bassini operations caused the radical treatment to very properly fall into disrepute. With an aseptic technic and the complete removal of the sac and the suturing of the muscular and fascia layers separately, the percentage of cures increased tremendously, in the hands of experienced operators and with aseptic healing of the wound, nearly every hernia can be permanently cured.

Deaver writes: "If hernia in a child is not cured within a year by a truss, operation should be resorted to. It is not advisable to order trusses among the children of the poor; too often, in such cases the wearing of a truss offers a false sense of security against accidents, such as strangulation, and the hope that a truss will cure these hernias often proves futile. Since the operation practically has no mortality, and the results are so good, radical operation is justifiable, and this wholly irrespective of the age. In large serotal hernia the use of a truss is never advisable because the operation is not serious and the results are perfect and permanent."

Evans says a simple removal of the sac, if thoroughly carried out, is all that is needed to prevent recurrence of hernia in children. Gibbon states that in operating for hernia on the right side the appendix can, as a rule, be removed easily, and in children especially is it good practice.

The interval operation is always the operation of choice besides assuring the patient against recurrence. No matter how carefully applied, taxis of a strangulated hernia is never without danger of rupturing the intestine. It is probable that this accident occasionally occurs without the knowledge of the physician, and the resulting peritonitis ascribed to another cause. Rupture has been known to occur from taxis even with a sound intestine. The only safe and sure treatment in the presence of strangulation is to do the radical operation under local anesthesia.

Sulton states that in 7,419 cases collected from the German clinics there was an operative mortality of only one-half of one per cent. Coley has reported 1,185 cases operated on by the Bassini method with only six recurrences. Sixty-five per cent of the recurrences occur during the first six months and eighty per cent of the recurrences occur during the first six months and eighty per cent within the first year.

The dangers of the injection treatment of hernia can not be too strongly emphasized. Parrafin is the material most frequently employed. Practically always the hernia recurs a few days or weeks after the injection treatment, should the hernia not reappear it is usually only a question of time until the hard masses of paraffin will suppurate or cause so much pain and inconvenience that their removal is required. The paraffin is gradually replaced by a firm mass of scar tissue which has a tendency to undergo malignant change. After the injection treatment has been used the radical operation is more difficult and recurrence more frequent than in uncomplicated cases. Charlatans and quacks are earnest advocates of the injection method of treatment and cases are recorded where they have made the injection into the femoral artery, resulting in gangrene of the extremity and a hip-joint amputation. When it is realized that a skillful operator has to exercise care to avoid injuring the femoral artery it is surprising that this accident does not occur more frequently.

The sac should always be completely removed, and when cut properly, the stump disappears from sight by the elasticity of the peritoneum. The removal of mesenteric fat in stout subjects will diminish intra-abdominal pressure and lessen relapses.

Do not use a truss after operation, it has a tendency to cause thinning and atrophy of the newly formed scar tissue and thus favors recurrence when the truss is discarded. In cases where the hernia is very large and the closure of the opening difficult, the use of an elastic support or bandage is often recommended for two or three months.

Of the causes of recurrence, septic infection is undoubtedly the most frequent. Coley says that with the use of rubber gloves and the greatest possible care in carrying out an aseptic technic he obtains 98 1-2 per cent of aseptic healing of wounds.

The careful preservation of the nerves in the treatment of hernia is an important, though neglected, factor in securing primary union and preventing recurrence. The inclusion of nerves, even the minute ones, in the suture might lead to paresis of the muscles innervated by them, and thus explain the occasional recurrence in certain cases that heal by primary union.

Of the several methods devised for the radical cure of inguinal hernia, I believe the best method to be Bodine's modification of the Halsted operation. The cord is not transplanted except in very large or recurrent hernia. Transplantation does not add to the difficulty of the operation under local anesthesia. The patient is out of bed in ten to fourteen days.

Coley states that the mortality under general anesthesia is not more than one-fourth to one-half per cent and the percentage of permanent cures in the hands of skilled operators is 95 per cent or more.

Extreme old age, organic disease of the heart, lungs and kidneys were formerly taught to be contra-indications to the radical operation. With the perfect technic of Bodine there is practically no contra-indication to the radical cure of every case, because with cocaine anesthesia there is no mortality. In over twenty-five hundred major operations at the New York Polyclinic Hospital under cocaine anesthesia there has not been a single death.

Local anesthesia removes the danger of ether pneumonia and renal insufficiency, every step in the operation is done with cocaine that is carried out with general narcosis.

Local anesthesia is applicable to all forms of hernia, while the radical cure of inguinal hernia is the most successful operation in the entire field of cocaine anesthesia. In inguinal hernia a general anesthetic is never indicated. In strangulation the lowered vitality and shock make cocaine a necessity to eliminate the additional shock of general narcosis, besides it allows ample time to ascertain the viability of the gut, and if resection is necessary, the radical operation can be performed without jeopardizing the life of the patient. Under general anesthesia it is often only possible to establish a fistula at the first operation and at a subsequent period to do an anastomosis and the radical operation.

Dewitt says many patients are induced to submit to a cure who would not do so with general narcosis, and the anesthesia mortality is removed.

A neuritis will usually follow the inclusion of the smaller nerves in a suture, it persists until the suture is absorbed or the nerve degenerates. The inclusion of the ilio-inguinal or ilio-hypogastric will in addition, be followed by a thinning and atrophy of the muscles supplied and partial anesthesia of the skin—this favors both suppuration and recurrence.

The nervous, frightened patient is the one that suffers most under general anesthesia and for that reason alone, an effort should always be made to employ cocaine. Bodine has said, so long as cocaine fulfills all the requirements of the ideal local anesthetic, it is waste of time to experiment with others of doubtful value.

A one-fifth per cent cocaine solution is employed for the skin and nerve trunks; elsewhere a one-tenth per cent solution is used. One-quarter to one grain of cocaine is all that is required for the most difficult herniotomy. Untoward or poisonous symptoms have never been observed when the weak solutions are employed. The weaker the solution, the greater the amount of cocaine that can be injected without producing toxic symptoms.

As a rule, all patients should receive a dose of morphine (from one-quarter to one-sixteenth grain) one hour before operation. This allays any restlessness or nervousness that may be present and takes the edge off of

any pain, actual or imaginary, the patient may experience during the operation, besides lessening psychic shock and absolutely preventing toxic effects in patients with an idiosyncrasy for cocaine or any other active alkaloid. The addition of hyoscine to the preliminary dose of morphine makes it possible to complete hernia operations under local anesthesia that have heretofore been regarded as only suited to general narcosis, as large umbilical and ventral hernia.

The administration of an intestinal antiseptic preceding the operation and while the patient is confined to his bed will materially add to his comfort by preventing the formation of gas, as well as the rare occurrence of acute dilation of the stomach, this latter complication, however, is more frequently observed following general than local anesthesia.

The successful use of local anesthesia depends on patience, an intimate knowledge of sensory nerve distribution, and special training in the method. The technique of the injection is always delicate, it varies with each region, each operation and in each patient. The technique must be learned with a knowledge of its adaptation to each individual case. Upon the strength of the solution depends the rapidity, intensity and duration of the anesthesia. Because of the slower appearance of analgesia with the weaker solutions, surgeons who begin operating as soon as the injection is completed will often fail with local anesthesia.

The absence of nausea, vomiting, shock and less post-operative pain than follows general narcosis, contribute to the patient's comfort. Sharp dissection, a careful preservation of the nerves with gentleness in handling the tissues assure a prompt repair by primary union and reduce the liability of recurrence to a minimum.

Bodine writes: "Modern surgery advises a patient with inguinal hernia to submit to operation, but the majority of patients accept a truss and their hernia instead. The two or three millions of ruptured individuals in the United States rejecting this surgical advice constitute a defeat for surgery in its application to the people, for the surgical proposition of today advances over 95 per cent of permanent cures in adults, short detention from business and an exceedingly small danger to life. The removal of a personal deformity, restoration to full earning capacity and relief from an actual menace to life would seem desirable, but the number of trusses worn attests colossal rejection. Further curtailment of hospital detention is impossible, new methods of closing the canal to increase the percentage of permanent cures is improbable, and danger to life will always reside in a general anesthetic. Cerebral narcosis, with its small but certain danger to life and with its other disagreeable features probably presents to the patient the most deterrent factor to accepting a surgical operation for the cure of a hernia. It is, then, to the amendment of this last feature that surgery must look if the ruptured are to be attracted. It is solely upon anatomical grounds that the operation of inguinal hernia lends itself to local anesthesia. General anes-

thetia should only be employed in cases where local anesthesia is absolutely contra-indicated."

When for any reason local anesthesia can not be used, the patient should receive nitrous oxide and oxygen, the safest of all general anesthetics.

I have never seen a patient who has had an operation for hernia with cocaine anesthesia that regretted the selection of the method, or in double hernia, one who would consent to general anesthesia for the second operation. It is not at all unusual for a patient to fall asleep during the latter part of a single or double hernia operation, especially where the sac is very adherent and the dissection necessarily slow and tedious.

Local anesthesia adds to the comfort and safety of the young and robust, while in old age, shock, hemorrhage, pulmonic, cardiac and nephritic lesions cocaine is absolutely indicated and its use urgently demanded.

Children and nervous patients are not the most favorable subjects, but this factor alone is not sufficient to exclude local anesthesia. Although it requires more time to gain their confidence and much care to maintain it, when they are finally convinced that the method is painless and you will not allow them to feel the slightest pain, they usually become model patients. I have employed cocaine anesthesia in removing the deep cervical glands in a girl of seven and in another case for appendectomy in a girl eight years old. The patients' hands were not held during the operation and neither complained of pain at any time during the procedure.

THE CURE OF OPIUM AND MORPHINE ADDICTS.

Dr. W. E. Rammel, Bartlesville, Oklahoma.

It is with great reluctance I address you and give my experience along the above indicated line. My only apology is the thousands suffering from the opium habit and the great difficulty in relieving them of the same. My intention can only be humane and if my claims are extravagant, all I ask is a fair trial of this treatment to convince you. I have contemplated giving this treatment to the medical profession for some time, but fear of being misunderstood as to the seriousness of my claims has deterred me. I believe every physician should give freely of his knowledge and experience to the profession and especially if it may be of great benefit to mankind.

What greater curse than to find one has fallen a victim to the morphine habit! What greater sorrow or disastrous outlook can befall than to find the father, mother, son or daughter has become addicted to this alluring, fascinating, tyrannizing curse!

These victims are helpless and, as it were, bound hand and foot; powerless within themselves to cope with the condition. It ruins them financially; lowers their vitality; undermines their intellectual power; dissipates their honor; and robs them of all their finer feelings towards self, home, and society; finally, casting them upon a shoreless sea—lost!

Can one think of a more humane act than to give to these sufferers easy, efficient relief! They cannot but enlist our sympathy although their condition and habit is loathsome to us. They know they cannot resist the drug. They know the excruciating pain, depression, nervousness and horrors attendant to such a course and the thought of it makes them tremble with fear.

It is not the intent of this paper to describe the individual suffering the patients endure when the drug is taken slowly or suddenly away from them, as every physician has had more or less experience along this line. Let it suffice to say that a morphine addict, or at least many of them, will really die if the drug is taken suddenly away from them. Therefore, when we come to understand that these sufferers cannot stop the drug without assistance and we find we are able to render that assistance in a reliable, efficient and scientific manner with assurance of success, then it may be said, we have done much for humanity.

In the treatment I am going to give you, the patient can be treated without suffering or danger and a cure can be promised in the shortest possible time.

Precautions:

If the drug taken is gum opium or other insoluble forms, discontinue the

insoluble form and put them on the soluble form for several days before beginning treatment. The reason for this is apparent as the insoluble form leaves a coating on the wall of the stomach and bowel containing active principles of the drug, thus necessitating a longer time for its elimination.

If there is any organic lesion of the heart or kidneys, such cases should be watched carefully during treatment.

Preparation of the patient:

At bedtime the night before treatment is to be instituted, allow the patient to take his usual and final dose of the drug. Impress him with the fact that he must not secrete any of the drug as he can have it any time by the asking. Assure him he will not be allowed to suffer. Be sure to obtain all the drug and outfit before beginning treatment as an additional dose will prolong the treatment. Distrust any cases that have been treated by the gradual withdrawal method as they are sure to secrete the drug in remembrance of past experience. Do not undertake to treat a case without having a special nurse, and if possible, confine the patient in a hospital.

Treatment:

Let the patient go as long as possible next morning provided he does not suffer. Ten or twelve hours from this last dose the night before is long enough. Start the treatment about nine or ten o'clock a. m. by giving 1-300 grain hyoscine hydrobromate hypodermically in the arm. Repeat the dose in twenty minutes, increasing the amount to 1-150 grain dose. This usually brings on a mild form of delirium. If delirium is not present in an hour after the third dose, repeat, giving 1-75 of a grain; continue with this dose every hour until delirium is present. As a rule, these extra large doses are not necessary. The object to be attained is to produce a mild form of delirium and maintain it by a judicious administration of the drug, both as to size of dose and as to interval.

As a rule young persons require more of the drug than older persons. Some may require 1-150 grain every hour.

Delirium:

A noisy delirium coming on some time after treatment has begun is a sign treatment is being pushed too much. Stop the treatment and wait for rational symptoms and then begin with a smaller dose. If delirium does not come on as the treatment progresses, gradually withdraw the treatment and watch for withdrawal symptoms. If none occur do not push the treatment to produce delirium as the patient is probably saturated with the drug and practically cured.

Dangers:

Its principal danger is paralysis of the pneumogastric nerve, thus causing great depression of the heart and respiration and finally paralysis of both. An overdose early in the treatment before the system becomes saturated with the

drug may produce profound sleep. Later in the treatment, large doses produce wild delirium; the patient becoming violent and ungovernable. Should this occur, stop the treatment, restrain the patient and let the wildness wear off or in case of necessity, give 1-8 grain pilocarpine hydrochlorate hypodermatically; which will restore his calm and allay the condition. Some patients may have wild delirium for two or three days should the drug be pushed too fast.

So long as the pulse and respiration are good, you can push the treatment until nervousness and pain are allayed. If the patient has nervousness or pain occur during treatment it is conclusive evidence that enough of the drug is not being given. Push the drug every twenty minutes until these symptoms cease. For the first twenty hours push the treatment, keeping the patient saturated with the drug. For the next twenty-four hours give as little of the drug and at as long intervals as possible to maintain a mild delirium. Some may require as much as during the first twenty-four hours.

At the end of forty-eight hours, discontinue the drug and watch for pain or other withdrawal symptoms; if patient goes twenty-four hours without symptoms of withdrawal, he is ready for the after treatment. If he develops withdrawal symptoms, put him back on the treatment and push it for ten or twelve hours, when you can discontinue the treatment, let the patient come out from under the drug and will find he is all right so far as pain, withdrawal symptoms or craving morphine are concerned. The patient emerges from the treatment so far given with a clear mind and a happy and cheerful demeanor but somewhat weakened. It will be impossible for you to induce him to take his former drug as I have proven to my own satisfaction many times.

Twelve hours after the last dose of hyosine hydrobromate, give 1-300 to 1-150 of a grain and continue this dose every twelve hours for forty-eight hours. At the close of this period, discontinue permanently all treatment with this drug.

At the close of seventy-two to ninety-six hours, the patient will suffer some weakness or exhaustion from the discontinuance of his drug, the prolonged treatment and the fact that he has been without food or nourishment up to this time. Therefore, begin giving strychnine nitrate hypodermatically in 1-20 to 1-10 grain doses every twelve hours and put him on a light but nutritious diet.

These patients do not usually sleep well during the first part of the night following treatment but this condition will wear off soon if they are left alone. Should it prove too troublesome give thirty to sixty grain doses of soda bromide at bedtime but discontinue it as soon as possible.

Should the patient have some aching in the calves of the leg it can be controlled by the hypodermic injection of strychnia nitrate 1-20 grain doses. hot baths and hot water bag to the part. Diarrhoea is sometimes troublesome following treatment but can be easily controlled with one drachm doses of

the fluid extract haematoxylon. Should the case be complicated by organic disease of the heart, lungs or kidneys, it will require about twenty-four hours longer treatment, smaller doses and more careful watching of the patient. If the case has taken atropine with morphine, it may take less treatment or a tolerance for atropine may have become established and it will require more treatment.

Following this treatment which is practically finished in ninety-six hours the patient will be weak, debilitated, slightly nervous and aenemic. Therefore, tonic treatment, nutritious food and general means to build up the patient must be resorted to for several weeks.

With following clinical report of a few cases to illustrate, I will close this paper, hoping it may do much toward relieving and curing these sufferers who have been unfortunate enough to contract this habit and believing it will be as successful in your hands as it has been in mine if diligently and carefully followed.

Mrs. J. S. age 29, was taking four ounces of laudanum every twenty-four hours. Had been an addict for fifteen years. After preparation treated as follows:

- 9:20 a. m. 1-300 gr. hyoscine hydrobromate.
- 9:40 a. m. 1-150 gr. hyoscine hydrobromate.
- 10:20 a. m. 1-150 gr. hyoscine hydrobromate.
- 11:20 a. m. 1-100 gr. hyoscine hydrobromate, vomited.
- 1:00 p. m. Mild delirium.
- 1:45 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
- 3:25 p. m. 1-100 gr. hyoscine hydrobromate, mild delirium.
- 4:50 p. m. 1-75 gr. hyoscine hydrobromate, mild delirium.
- 8:40 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
- 10:40 p.m. 1-100 gr. hyoscine hydrobromate, active delirium.
- 1:50 a. m. 1-100 gr. hyoscine hydrobromate, active delirium.
- 6:45 a. m. 1-100 gr. hyoscine hydrobromate, active delirium.
- 10:30 a. m. 1-100 gr. hyoscine hydrobromate, mild delirium.
- 3:50 p. m. 1-100 gr. hyoscine hydrobromate, mild delirium.
- 7:15 p. m. 1-100 gr. hyoscine hydrobromate, active delirium.
- 7:30 p. m. pulse 140 regular.
- 11:15 p. m. 1-150 gr. hyoscine hydrobramate, mild delirium.
- 4:00 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
- 9:45 a. m. 1-40 gr. strychnine nitrate; pulse 140.
- 12:00 m. Complained of burning and pain.
- 1:40 p. m. 1-150 gr. hyoscine hydrobrom, mild delirium.
- 2:00 p. m. 1-150 gr. hyoscine hydrobrom, pulse 120, vomited.
- 4:00 p. m. 1-150 gr. hyoscine hydrobrom, belching gas.

- 5:30 p. m. 1-150 gr. hyoscine, mild delirium.
7:45 p. m. 1-150 gr. hyoscine hydrobrom, mild delirium.
9:00 p. m. 1-150 gr. hyoscine hydrobrom, some suffering.
10:20 p. m. 1-150 gr. hyoscine hydrobrom, mild delirium, rest.
6:00 a. m. 1-20 gr. strych. nitrate.
10:30 a. m. 1-300 gr. hyoscine hydrobromate.
12:15 p. m. 1-20 gr. strych. nitrate; resting.
6:30 p. m. 1-30 gr. strych. nitrate; burning.
10:30 p. m. 1-450 gr. hyoscine hydrobrom; resting, belching some.
6:45 a. m. 1-20 gr. strych. nitrate; resting.
10:30 p. m. 1-450 gr. hyoscine hydrobrom; resting.
5:00 p. m. 1-20 gr. strychnine nitrate; resting.

Case finished except for after treatment and tonic.

Mrs. F. J. Y. age 46, was taking one dram morphine per week internally. Had been an addict for ten years. After usual preparation treated as follows:

- 8:35 a. m. 1-300 gr. hyoscine hydrobromate.
8:55 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
11:00 a. m. 1-350 gr. hyoscine hydrobromate, mild delirium.
1:50 p. m. 1-300 gr. hyoscine hydrobromate, mild delirium.
5:00 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
5:55 p. m. 1-150 gr. hyoscine hydrobromate, active delirium.
8:40 p. m. 1-300 gr. hyoscine hydrobromate, mild delirium.
9:40 p. m. 1-150 gr. hyoscine hydrobromate, active delirium.
12:10 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
2:00 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium. . .
5:00 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium, sleeping.
7:35 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium, sleeping.
9:00 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
9:55 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
12:40 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
2:35 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
5:35 p. m. 1-150 gr. hycosine hydrobromate, mild delirium.
8:45 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
10:45 p. m. 1-150 gr. hyoscine hydrobromate, mild delirium.
1:45 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium, sleeping.
4:45 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium, resting.
7:35 a. m. 1-150 gr. hyoscine hydrobromate, mild delirium, resting.
12:50 p. m. 1-300 gr. hyoscine hydrobromate, mild delirium, bowels moving.

- 1:25 p. m. 1-150 gr. hyoscine hydrobromate, some pain.
3:30 p. m. 1-150 gr. hyoscine hydrobromate, resting.
5:30 p. m. 1-150 gr. hyoscine hydrobromate, resting, bowels moving.
7:50 p. m. 1-150 gr. hyoscine hydrobromate, passes mucous, resting.
9:30 p. m. 1-150 gr. hyoscine hydrobromate, resting.
8:55 a. m. 1-20 gr. strychnine nitrate, some aching.
12:20 p. m. 1 dram fluid extract haematoxylon.
1:25 p. m. 1-20 gr. strychn. nitrate, resting.
12:30 a. m. 1-20 gr. strychn. nitrate; resting, happy.
Case finished except for after treatment and tonic.

"THE VARIOUS ASPECTS OR FORMS OF ICTERUS OR JAUNDICE."

Dr. H. M. Williams, Wellston, Okla.

The subject of this paper is one with which every physician is familiar, to a limited extent at least, though like many of the common symptoms, there are but few physicians who have been engaged in actual practice for a term of years, but at some time in his medical career, has searched in vain to ascertain the exact lesion that brought about this symptom called jaundice and the patient passes into the great beyond leaving our diagnosis to be made at the autopsy, in case we are fortunate enough to get one. This subject could, possibly, have been considered better from a surgical than a medical standpoint, as sooner or later all obstructive cases must pass into the hands of the surgeon.

Thus, being a regular practitioner, we will not be able to devote this paper to our own researches exclusively, but will depend upon that, in a large measure, made by others, as we find ourselves in that predicament which one oftentimes reaches, when they arrive at a point where conclusions are hard to draw. We shall be able only to briefly discuss some of the most common causes that lead to jaundice, with reference to some special cases, leaving you to draw your own conclusions.

The following is probably as good definition as we could obtain for jaundice: "This is not a disease, but only a symptom group occurring under a variety of conditions and characterized by yellow discoloring of the skin, tissues and fluids of the body with bile pigments and excretions of the pigments in the urine."

This symptom is found in almost all climates and ages, perhaps most often between the ages of thirty and sixty, more often in female than male, owing to dress custom or wearing the corset. It is not uncommon to meet with a patient slightly jaundiced to a well marked case, especially is this true in a malarial district. The physician's duty is to determine, if possible, the source, whether it is due to some form of obstruction or other causes which are classed as the non-obstructive class. Though the opinion is maintained by some that all forms of jaundice should be classed as the obstructive type, yet this at this time is not the accepted opinion.

A Dr. Hunter classes the two forms as obstructive and toxæmic, whose opinion appears to have considerable support and to us seems a very reasonable classification. Gibson makes the following classification of the obstructive form of jaundice: "(a-1)—Obstruction within the duct outside of the liver such as gallstones, foreign bodies, cancer of the ducts and swelling of the mucous membrane of the ducts, extending from the duodenum. (b-2)—Pressure on the ducts outside of the liver which is due to enlarged glands,

tumors, cancer of the head of the pancreas and various growths or abnormalities of the abdominal cavity. (c-3)—Obstruction of the ducts inside the liver which is usually caused from cancer of the small bile ducts. (d-4)—Pressure of the ducts inside the liver, caused from cancer nodules of the liver, abscesses, hydatid and cirrhosis of the liver. Catarrhal jaundice, the most frequent type met with, and one that most cases are diagnosed as, at the onset, results usually from duodenal catarrh, as the result of an attack of indigestion or error in diet, colds, exposures, malaria, portal obstruction, Bright's disease, or chronic heart disease. The non-obstructive type is that form where there is no obstruction in the large ducts, though there may be a slight obstruction of the small ducts. Dr. Hunter makes three groups of this class. First, those due to drugs, snake bites, etc. Second, those due to septic fevers, malaria, enteric, yellow fevers and pyaemic conditions. Third, acute yellow atrophy.

In this type the jaundice is much less pronounced than in the obstructive type, there being only a partial absorbent of the bile pigments by the lymphatics of the liver.

While it is very common for us to think of jaundice at times as being the result of an inactive state or condition of the liver, this is not the case. Jaundice from the suppression of the liver function cannot be possible as bile pigment can only be formed as the result of hepatic cell activity. "Contrary to the accepted pathological doctrine, the bile which is eliminated by the urine and deposited into the skin, in case of obstructive jaundice, does not find its way into the general circulation through the blood capillaries. It is the lymphatic system of the vessels alone, which absorb biliary matter in obstructive jaundice and it is through the instrumentality of the thoracic duct, that they reach the general circulation." If the thoracic duct should be ligated it would be hard to produce jaundice in the obstructive type. It is further claimed to cheek jaundice after once set in, at least until small colateral ducts may form.

Dr. Gibson further states, that it is always important to determine whether jaundice is due to some gross obstruction of the large ducts and to remember that nearly all cases of jaundice are due to malignant diseases, gall stones, catarrhal jaundice or cirrhosis.

Under malignancy we may have cancer of the bile ducts, or of the head of the pancreas, cancer of the small bile ducts inside of the liver or cancerous nodules inside of the liver. In determining the above some of the most pronounced symptoms are the following: However, in the prodromal period, there is hardly any time that it can be distinguished from a case of ordinary jaundice, has usually the same symptoms at the onset. Following in a few days with vomiting, loss of appetite, nauseated condition and malaise. After the disease has continued for several days, the characteristic symptoms become more pronounced. The vomiting more severe. May vomit blood, pain intense. The jaundice may be of a greenish yellow. Patient may become

delirious, passing into a state of coma. Lucine and tryson crystals are found in the urine.

Hypertrophic cirrhosis might present similar symptoms, but usually the enlarged liver and duration of time will eliminate the above condition.

Gallstone stones may be found either in the gall-bladder, in the cystic duct, in the common duct, or in the hepatic duct, or in the liver itself. According to Dr. Krauss an attack begins suddenly, usually two or three hours after a meal, with violent spasmodic, paroxysmal pains over the hepatic and epigastric regions reflected upward and to the right side of the thoracic cavity; with laborious respiration, distressed feeling, nausea and vomiting at times; slow, hard pulse; cold extremities.

Jaundice does not always follow an attack of gallstones, but as a rule will in a few days, if the obstruction is in one of the large ducts. Gallstones may exist in the absence of biliary colic, with jaundice, though the diagnosis is seldom made.

Catarrhal jaundice is the diagnosis given to most cases of jaundice at the onset, and in the event it should be due to an obstruction that is removed of itself, the diagnosis might as well stand, until another attack at least, but the most pronounced symptoms of a case of catarrhal jaundice, are those following an attack of indigestion, the discoloration of the skin is a bright yellow, never a dark green, no marked cerebral symptoms though the patient may feel distressed, constipation and clay colored stools as a rule. This type of jaundice is brought about by a swelling or thickening of the mucous membrane of the common duct; as previously stated is often the result of a catarrhal condition of the duodenum. The gall bladder, owing to its extended condition, may be felt at the lower margin of the liver. This condition is frequently found in children who are subject to derangement of the digestive tract; seldom proves fatal and yields readily to treatment.

A cirrhotic liver does not always cause jaundice, though as a rule will. It is found almost, if not entirely, in that class of patients addicted to excessive use of alcohol, although the opinion is held by some to occur in those who have not used alcohol, though this seems to be a disputed question.

A cirrhotic liver is usually atrophied, though may be hypertrophied, owing to the formation of fatty cells, but in either condition we find a hard liver with a well defined margin. An ascites is usually present, with a slight chronic peritonitis, odema of the feet, marked nervous symptoms, also a uremic condition; the uremic symptoms are so pronounced that at times it is hard to tell if we have a cirrhotic liver or a cirrhotic kidney, which fails to excrete the urine, and usually proves fatal.

The non-obstructive or toxaemic type, is that form of jaundice that is the result of some poisonous chemical or infectious fevers. Snake bites will at times produce a marked case of jaundice, also pyaemic condition will do

the same, this form of jaundice may find its way to the liver through the general circulation.

In conclusion, we find jaundice due to the malignancy of the bile ducts is rare, although cancer of the head of the pancreas is more apt to be met with.

The catarrhal type of jaundice is the one most frequently met with. Gallstones are very common, and as a rule the diagnosis is not difficult. But may be confused with gastritis or neuralgia of the stomach. Contrary to the prevailing opinion we have met with one case having all the characteristic symptoms, due in our opinion to a cirrhotic liver, female, age fifty-seven, liver hypertrophied, with a pronounced jaundice, who gave no history of the use of alcohol.

Thus we conclude that all conditions of jaundice that does not readily yield to sane treatment, should require very close investigation as to the source, if in doubt, consultation is necessary in most cases from a surgical standpoint, because if not relieved within a short period it will prove fatal. The prolonged cases will be found due as a rule to some form of obstruction which will require surgical procedure if any relief can be had.

DISCUSSION.

Dr. A. K. West: This paper is so complete and so fully covers the subject that I haven't very much to add. There was one form of jaundice that I notice the doctor didn't take up, it is hemapheic. Outside of that form of jaundice I know of nothing that the doctor didn't pretty well cover and I have nothing to add but to commend the paper.

Dr. Walker, Shawnee: The paper and subject is a subject that I don't think we ought to pass over so lightly as not to recognize the condition and have a little more discussion. The form of jaundice that Dr. West spoke of is another form from the paper, and there is yet I believe another form called acute febrile jaundice. In Shawnee we have had a very marked epidemic of what we pronounce Weil's disease in the last six or eight months and out of a population possibly of eight or nine thousand we have had I expect three hundred and fifty cases of acute febrile jaundice. Those are the only two kinds of jaundice that I know of not covered by the paper.

RABIES, WITH REPORT OF A CASE.

Dr. G. A. Morrison, Poteau, Oklahoma.

Rabies or hydrophobia is an acute infectious disease of the central nervous system which occurs in man as well as in other warm blooded animals. A disease communicable to man by the bite of a dog or other animal suffering therefrom. That rabies is caused by a specific micro-organism is a conclusion unavoidable, notwithstanding the fact that all efforts to establish this theory by experiment and observation have proven futile. Even though the specific infectious agent is not known, the same can be propagated in the central nervous system of living animals.

Careful examination of the brain, spinal cord, nerve trunks and saliva after inoculation has shown the poison present. It has been demonstrated that the poison is present before any symptoms have developed in the period of incubation while to all appearances the animal was in normal condition. Authorities agree the poison is not usually present at any time in the milk, semen, aqueous humor of the eye or cerebro spinal fluid, though in some rare instances, it has been found in some of these localities. That accidental infection usually results from the bite of a mad dog, and therefore is a direct result of the saliva being introduced into the wound made by the teeth, is a fact known to us all.

Infection may occur by the licking of an abrasion of the hand by a pet dog. While the dog is going through the period of incubation before any symptoms of the disease have manifested themselves in the animal. Whether or not an abundant nerve supply renders a part more specially liable to infection is a question undetermined. The experiments by way of artificial inoculation of animals would indicate the greater the nerve supply the greater the liability to infection as injections made into the brain, nerve trunks or spinal cord are uniformly successful and less so in other localities. Experience with and observation of cases teaches that the infection is always greater in deep wounds. Whether his theory be true or not the danger from bites on the hands or face is greater independently of this, by reason of the fact that they are usually bare, thus giving free access of the saliva to exposed tissue. Whereas in covered portions of the body the clothing would take up a portion of the poison and not so great an amount would come in contact with the wound surface. But be the portal of entry what not the disease develops only where the poison invades the central nervous system and observation goes to show that the course of the poison from the seat of infection to the brain and spinal cord is for the most part by way of the nerves themselves and not through the blood or lymph channels, which are

the distributors of the various micro-organism and toxics in other infectious disease.

The period of incubation in rabies varies in different species of animals, also in different individuals of the same species. The usual time in dogs is three to five weeks, while it varies greatly in human beings. Six weeks to two months being the average period of time elapsing between infection and manifestation of symptoms. Usually there are unmistakable symptoms of the disease in the course of the second month after infection, very rarely in fifteen days and more rarely still in three months or thereafter. During the period of incubation the patient suffers no more inconvenience than from a simpler wound of similar size.

In fact Tillman asserts that a wound made by a rabid dog will heal usually with exceptional rapidity in human beings. There are no symptoms during the period of incubation that would indicate whether the patient had been bitten by a rabid dog. There is a marked similarity in the characteristic symptoms of the disease as manifested in the dog and the human being. In the human subject the first symptoms appearing after the period of incubation are psychical. The individual being depressed in spirits, irritable, excitable and restless, suffers from sleeplessness, loss of appetite. He is oppressed with a sense of impending danger. Even this early there may be antipathy toward liquids. The reflexes and sensibility are often greatly increased; sometimes loud talking, a bright light, or any unusual noise is very distressing. Osler includes in this stage the infected condition of the larynx and difficulty in swallowing consequent thereto, which is the most distressing as well as the most characteristic symptom of the disease in man.

Tillman in discussing the subject regards this symptom as the beginning of second stage. There is a difference of opinion as to temperature at this time, some others claim to have noticed an elevation of temperature while others say there is no change either way. The huskiness of the voice at this time depends more or less on the amount of infection of the larynx. Along with these symptoms there appears severe spasm and the muscles of respiration occurring in paroxysm, along with the slightest excitation of nerves the sight of liquids even being sufficient sometimes to cause them. The spasms of muscles of deglutition and respiration readily become general and are usually clonic, sometimes tetanic. Salivary secretion is increased, nerves of special sense also being infected, not only sight and hearing, but sense of smell also. For the most part the mind is clear but there are apt to be manic seizures from time to time. Pulse becomes gradually weaker, being greatly accelerated after a paroxysm. Temperature somewhat elevated differing in different individuals running from 100 to 101 1-2 or 102.

The third stage is marked by weakness, exhaustion and paralysis. There is some abatement of the spasm and the difficulty of swallowing and breathing. This last stage lasts from four to twelve hours when death occurs, sometimes with recurrence of spasms but oftener quietly. Some others claim that consciousness is present to the last, others that unconsciousness supervenes. The duration of the disease in man from the first appearance and the

prodromal symptoms to death is from two to four days when the symptoms have once developed the termination is always fatal. The diagnosis of rabies presents no difficulties. Usually when called to see a patient suffering from the disease we have the history of a dog bite, which coupled with the symptoms manifest enables us to make a diagnosis without any trouble.

In the matter of treatment there is but little to say. Prior to the advent of the Pasteur treatment there were various plans of medication in vogue, attended with little favorable results.

The treatment being based on general principles. Today we expect much from the Pasteur treatment just as we do from the use of anti-toxin in our diphtheria cases. The treatment is so familiar to all as to make it unnecessary to enter into detail in this paper. In addition to the use of cord emulsion the general health of the patient should receive careful attention. The matter of elimination demands close observation on the part of the physician in charge and the hygienic surroundings of the patient should be such as are most conducive to general health. There are numerous places where the Pasteur treatment is administered under the most careful observation of competent men and the results obtained are most gratifying in the vast majority of instances. It has been my misfortune to handle a little patient suffering from hydrophobia recently, a report of which I make a part of this paper.

Was called to see Willie B., age four and one-half years, (white), May 30, 1910. On arrival at home found the boy on a bed being cared for by mother and neighbors, having been bitten by the family dog. Face was covered with blood to the extent that a glance suggested great damage to the whole cheek.

The mother gave following history of condition: Child had accompanied older member of the family to the place where the father was engaged in his work, carrying to him his dinner. On their return home they crossed a weed-covered ditch near the house; as they did so, the dog sprang upon the boy lacerating his face.

Examination of injuries showed extensive deep lacerations over and to the outside of right eye about six in number. A laceration beginning at the inner canthi of the right eye and extending across the superior region of the malar bone to the cheek. Another cut about an inch long was made across the anterior surface of the neck. Patient was anesthetized, the wounds cleansed with a bi-chloride solution, thoroughly cauterized, touched with pure carbolic acid followed with alcohol and then dressed with moist bi-chloride gauze.

At 5:00 p. m. the father took the boy to Oklahoma City, Oklahoma, for Pasteur treatment. He arrived on the morning of the 31st day of May and a twenty-one days' course of treatment was begun. At the expiration of the twenty-one days the father returned home with the boy who was apparently in excellent health. He was about town and seemed to be entirely free from any ill effects. The wounds had healed kindly and to all appearances the child had fully recovered.

He remained in apparent health until June 27th, when the mother phoned me Willie was not well and asked me to see him. On arrival I found the little fellow about the house and at his play but not well. His face was slightly flushed. Temperature ninety-nine. Tongue coated, bowels had been slightly constipated for a day or two. In short the case presented the ordinary picture of a beginning remittent fever.

I prescribed for him and called again later in the evening when I found the temperature practically the same as early in the day but the patient complaining of headache and sore throat. No evidence of sore throat Tuesday morning, the temperature was one hundred and one, slightly nervous, mind clear, could get up and go about the room which he did. Bowels had moved freely. Still complaining of sore throat. Nervous condition more marked; at the evening visit found the nervous condition intensified very much. Temperature however had dropped to one hundred. Insisted it hurt him to swallow.

The manifestations of nervous disturbance simulated those of meningitis somewhat.

I became suspicious of coming trouble. This was about 5 p. m. About 9 p. m. Dr. R. L. Morrison saw the case with me, and the conditions at this time were such as to warrant a diagnosis of hydrophobia. The father was made acquainted with the gravity of the case and an attempt was made to alleviate the suffering of the child by the administration of sedatives. On Wednesday morning I rang the home and inquired as to the condition of the little patient, was told by the father the boy seemed better. Half hour later I was called hurriedly to his bedside and found him in a violent convulsion. However he quieted down in a few minutes and asked to be allowed to go out on the front porch which he did. Then said he wanted a drink. Water was handed him but he could not swallow it. An attempt to do so being followed immediately by a convulsion; when the paroxysm subsided he wanted to return to bed. When his father attempted to pick him up he said he could walk; being allowed to try, he took a few staggering steps, threw his hands up, his body bent backward and limbs became uncontrollable losing all power of co-ordination, had to be caught up in arms to prevent falling.

This was the general condition up to the time of his death which occurred at 12:15 Wednesday. At no time after Tuesday evening was he able to take a drink of water and from early Wednesday morning to an hour before his death when he passed into the paralytic stage was he able to take any fluids except at about 9:30 a. m., twenty or thirty minutes after a hypodermic of 1-8 grain Morphia Sulph. we succeeded in getting two or three teaspoonfuls of milk down him by being very careful in administering it with a spoon. At about 10:30 he was given another hypodermic of 1-8 grain Morphia which for a time seemed to have little if any effect in lessening the force of convulsions. From early Wednesday morning until near the hour of his death was almost one continuous convulsion with all the horror of involuntary muscular contraction and facial contortion incident to hydrophobia. Even though in the paralytic stage at the time of death in so far as voluntary mo-

tion was concerned, the death struggle was marked with involuntary contraction of muscles of limbs, convulsive in character. This case was seen by Dr. Chambers, Dr. R. L. Morrison, Dr. Hardy and Dr. Plumlee, all of Poteau, Oklahoma, and the diagnosis of hydrophobia concurred in by them.

The case was one of peculiar interest in many respects. In the first place it was an innovation on the routine of general practice, affording an opportunity to come face to face with actual conditions rarely met with. It was of interest in that almost immediately after the receipt of the injury or at most in a very few hours the Pasteur treatment was begun and of interest because of the early development of the disease after the cessation of the treatment. A question arises in my own mind as to whether a better result would have been obtained by prolonging the treatment to say thirty or forty days. Also a question as to whether the infection was more extensive by reason of the vascularity of the tissues. Or whether the nerve supply was the direct carrier of the infection.

DISCUSSION.

Dr. Ellison, Norman: Gentlemen, I enjoyed that paper a great deal. It showed a great deal of study on the subject. There is very little literature on the subject. The recent literature is not very large and is scattered over the world almost in four or five different languages. I have hunted it for several years, mostly in French. The Germans have some.

I wish to say a few words because I have been a good deal interested in that this year in connection with the Board of Health work at Norman. We have been called on nine different times to make a diagnosis of rabies in dogs. The difficulty of making any kind of a diagnosis is because the tissues don't reach us right. We have a laboratory test by which we take a portion of the brain and study the brain cells. It has been stated that if a dog has had the rabies from four to ten days that certain changes appear in the brain cell, and when found you can say positively that hydrophobia exists in that dog.

Then there is another method and that is by taking a section of the spinal ganglia. Take this data with the brain tissue. We take the brain cells and get them on a glass slide and examine them which takes all the way from five minutes to five hours.

Now we have had difficulty in getting the doctors to understand what we want to examine for hydrophobia signs. We get all kind of material. Of these nine cases that came in only three were in good condition and the rest of them were in all kinds of conditions. Usually the brain is wrapped up in a gunny sack and shipped, is on the road from twenty-four to ninety hours and comes in there in a stinking condition with maggots in it. Another thing is the dog shows some symptoms of hydrophobia and somebody blows his head off and then they send in a package of gun wads, brains and dog hairs, and then blame the laboratory.

One of the best ways is to kill the dog, then cut the head off and include

with the head the neck so as to get two or three spinal ganglia and take that head and pack it in ice in a bucket and then ship it in to the laboratory. And in that way it will be in condition to be examined. Another way is to preserve the brain and cord in alcohol. The state has provided that the examination shall be free of charge to the physician. All he has to do is send in the dog's head and pay the express and the report usually comes out in from twenty-four to forty-eight hours. In the case where a patient has been bitten by a dog the rabies do not develop for ten days and that allows time in which to make this diagnosis, so there is no great hurry to get the report from the laboratory. If the treatment is begun within ten days there is considerable time saved.

Dr. Jenkins, Enid: I would like to ask a question of the gentleman who has just left the floor. It seems that he has had a great deal of experience. What does he consider the best cauterization for a dog bite?

Dr. Ellison: That has been a question and it is generally considered that the electric cauterization is better than the medical.

IRITIS.

Dr. W. Albert Cook, Tulsa, Oklahoma.

Among the everyday diseases that the ophthalmologist is called upon to treat I know of none which at times requires more attention and tact to handle than iritis.

It is a disease which has usually run several days before we get to see it and these patients nearly all tell the same story; they did not come to have the eye treated sooner as they thought they had only caught cold in the eye or got some dirt in it, and that washing it in warm salt water would relieve it, or else they had been treated by the family physician for an acute conjunctivitis, which is not an uncommon mistake as all cases of iritis are ushered in with conjunctivitis unless it be an exceptionally mild case.

One-half of all the cases of iritis are caused by syphilis and about twenty-five per cent by rheumatism, and the balance are traumatic, idiopathic and a few tubercular. It shows no preference as to sex, but we see more cases in the male than the female as they are more prone to syphilis, and is a disease of adult life and seldom seen in children unless traumatic or congenital, but I have never seen a congenital case.

The prominent symptoms are photophobia, increased lachrymation, impaired vision, and pain over the brow and radiating down the cheek to a more or less degree, and sometimes so severe that an opiate is required; the eyeball is sore and tender on pressure which increases according to the involvement of the ciliary body; reddening of the conjunctiva which is more marked at the pericorneal zone; the iris is muddy and swollen and found to have lost its luster, and the margin shows a dark ring, the edge is rough and may be said to resemble saw teeth; the cornea is opaque and the aqueous humor is thick and turbid.

The diagnosis is not usually difficult but it has been mistaken for glaucoma and conjunctivitis. In glaucoma the cornea is usually clear and we do not have the scleral injection, while the pupil is dilated, the anterior chamber is clear so that the fundus can be seen and the excavated disk which is characteristic of glaucoma is visible; and increased tension very marked.

Conjunctivitis is not painful but has some discharge, the iris and cornea are not involved and all the symptoms are more mild.

Iritis is liable to recur and an eye that has had one attack is never as good as it was previously, although it may nearly approach its normal efficiency. The attacks are not nearly so apt to recur if the patient does not overtax the eye, while if it was caused by syphilis or rheumatism by giving these diseases proper treatment and closely watching them in the future or having them take a treatment of "606" if the former.

The pupil becomes contracted and its usual reaction to light and accommodation are affected, slightly in mild cases, while it does not respond at all in severe or pronounced cases. Exudates are almost invariably present on the posterior and anterior surfaces, and margins of the iris and are of a glue-like consistency. This is what causes the adhesions to form between the iris and the lens and is the chief cause of blindness in this disease. The pupil is thus often bound to the lens about its whole circumference so that it becomes immovable or adhesions take place at various points along the pupillary margin causing the pupil to contract and dilate irregularly when exposed alternately to deep shadows and bright light, this irregularity in dilation of the pupil is plainly shown when a mydriatic is instilled into the eye. Eventually the pupillary space may become covered with an exudate and if this be dense vision is seriously impaired.

In the early stages the synechia may be broken down by the prompt use of atropine; when these adhesions are broken up dots of brown or black pigment are left on the anterior capsule of the lens where the adhesions have formed. Sometimes these adhesions stretch as the pupil dilates leaving a thread or a patch of exudate connecting the margin of the dilated pupil with the point of adhesion on the anterior lens capsule; vision is always more or less impaired owing to the cloudiness of the aqueous humor, deposits on the lens capsule, and cornea, or exudates into the pupil and even into the vitreous chamber; interference with accommodation due to congestion of the ciliary body also causes temporary impairment of vision.

Occasionally attacks of iritis are encountered in which pain and redness are so slight as to pass unnoticed and in these cases impaired vision is the only symptom complained of, although upon examination synechie are found which have been gradually forming for some time.

The prognosis as regards having an useful eye after an attack of iritis depends upon three things, the time of recognition, the cause, and the line of treatment pursued. The treatment should start just as soon as the diagnosis is made, and you have satisfied yourself that there is not tendency toward glaucoma. The first thing to do then is to dilate the pupil or at least attempt to do so and see if adhesions have already formed. This is in some cases very difficult or impossible as adhesions may have formed before the case came under observation or there may be anterior and posterior adhesions from a previous attack, but all patients who have had previous attacks are not slow in presenting themselves to the ophthalmologist and have their diagnosis made when they arrive.

Atropine is to iritis what quinine is to malaria or salvarsan is to syphilis, and as has been said, it is the beginning, the middle and the end of treatment of iritis.

A few drops of one per cent solution of sulphate of atropine should be instilled into the conjunctival sac and repeated sufficiently often to paralyze the accommodation and to keep the pupil dilated. This may be aided or still further increased by adding to the atropine one per cent cocaine hydrochlorate.

Atropine not only dilates the pupil but prevents dangerous adhesions to the lens, but it also relieves the congestion of the vessels both of the ciliary body and the iris. It also applies the principle of the rest cure to the inflamed eye by paralyzing not only the ciliary muscle but the sphincter iridis. Smoked or amber tinted glasses should be worn to protect the eye from light and also wind and dust if the patient is to be allowed to go out of doors any; hot applications should be applied every hour in the form of hot compresses. The pain in iritis is often severe and in addition to the remedies just mentioned others are often needed, and we have a valuable adjunct in dionin in a three to ten per cent. solution, five or six drops instilled at intervals of a minute induce a serous exudation and marked chemosis of the conjunctiva; this artificially produced swelling acts as a lymphagogue and counter-irritant which gives great relief.

In severe cases where the above mentioned remedies do not give relief from the severe pain counter irritation in the form of leeches, blisters, or the old-fashioned mustard draft applied to the temple give marked relief. Aspirin in doses of from ten to fifteen grains in rheumatic iritis is very beneficial for the pain.

Proper elimination should not be overlooked and I usually give a course of calomel followed by a saline; iron, strychnine and quinine in this malarial country are indicated, and the iodide of potassium should not be overlooked and given in increasing doses whether it be syphilitic or not.

When the tension increases to a point where the sight of the eye is endangered paracentesis should be performed and a few drops of aqueous allowed to escape, and repeated from time to time if the tension continues.

Iridectomy has been recommended to prevent recurrences.

AN OBSTETRICAL RECORD OF FORTY YEARS.

Dr. William Nairn, Alluwee, Oklahoma.

When I was first requested to write an article for your society on the above subject, it appeared to me that my experience was so commonplace, was so nearly like that of every other doctor, that it would be an imposition on the intelligence of your membership.

But at the renewed request of Dr. Freer, and on reflection, I reached the conclusion that though my experience was commonplace it might be instructive and interesting, as some of the most useful lessons of life are learned from everyday occurrences.

Forty years ago I began the practice of medicine and I have continued in the business without intermission to the present time, though for three years of the period under consideration I did but little.

Thirteen hundred and seven obstetrical cases have come under my observation, including miscarriages and premature labors. The most noteworthy feature of my observations, it appears to me, is the almost unanimous occurrence of the left occipito-anterior presentation. There were four shoulder, three breech, six right occipito-anterior, thirteen in all—and the remainder as before stated, were normal, or left occipito-anterior presentations.

Miscarriages that have come under my observation have shown a large fatality—one-fourth having died.

As to the number of multiple pregnancies, there were thirteen in all—about one to one hundred labors. There were only three babies born of that number, if the cases of talipes are left out, and those that were tonguetied, that were to any marked degree abnormal. One of these cases had six toes and one had six fingers. These supernumerary members I removed without difficulty or danger. The other abnormal case was of a different character and of greater interest. It occurred in a case of twins. In one infant the entire encephalon was outside the cranial cavity, through the posterior foramen, covered only by the membranes of the brain, and connected with the cranial cavity by a band no larger than the index finger. It appeared normal in other respects, nursed as readily as the other child, and was quite thrifty until four months old, when it was suddenly taken with convulsions and died. I have a photograph of the child and hope to be able to present the society with one.

The following paragraph may savor somewhat of egotism; but a man who has practiced medicine forty years and is nearing his second childhood, may, perhaps, be excused if somewhat egotistical. No parturient woman that came under my observation that was in good health at the time of confinement but what got up without serious trouble—not a single case of septicemia or

infection following. There were four cases in which the patient had pneumonia at the time of delivery and they all died. Malarial fever is another complication that is responsible for six deaths in my obstetrical experience. Eight cases of puperal convulsions occurred in my obstetrical practice. And as before stated, miscarriages and premature labors have been attended with a large percentage of mortality.

In all of the cases that I have attended, but one called for instrumental delivery. She was a primipara, and at the first examination I realized I had caught a tartar. The transverse diameter of the pelvis was smaller than I have before or since met with. I at once advised the husband of her condition and suggested counsel. We successfully delivered the child without injury, and without serious injury to the mother—a slight laceration of the perineum being all. I advised her not to become pregnant again—an admonition she has religiously observed, though fifteen years have elapsed since it was given.

Fifty cases are the maximum number that I attended in one year; six cases in one week, though I could have attended seven, having been seen by the man in the case previously and agreeing thereto; but arriving home late at night and being very tired. I heard him making inquiry for me at my residence, and I layed low till he left and thus escaped.

There may be some desire to know what were my methods of procedure in conducting a labor case. If there were distinguishing features it was in strictly adhering to the motto, "Beware of meddlesome mid-wifery," though if there was a cause of action, to act decisively.

A NOTE ON THE EARLY DIAGNOSIS AND TREATMENT OF MENINGITIS.

By C. J. Fishman, B. S., M. D., Oklahoma City.

In view of the present epidemic in certain parts of Texas and the invasion of some of the counties of our own state with this dread disease, it may not be out of place to recall to mind a few points regarding this infection which may help to prevent its spread in the communities where it is first seen.

Those diseases which, including the epidemic cerebro-spinal type, give a clinical picture of meningeal irritation may be classified as follows:

1. Meningitis.

Acute, epidemic, pneumococcic, influenzal and meningitis due to the suppurative cocci, chronic, tubercular and syphilitic.

2. Polioencephalitis, a cerebral type of anterior poliomyelitis which is easily mistaken for meningitis clinically.

3. Meningismus, a symptom-complex simulating meningitis clinically and found most frequently in children in the course of acute infectious diseases particularly, apical pneumonia, gastro-enteritis, otitis media and typhoid fever.

Doctor Sophian of the Rockefeller Institute who is now in Texas studying the present outbreak, says the clinical diagnosis is never certain even when a complete clinical picture is present. A spinal puncture will not only determine the presence of the disease, but also the type. This procedure is easily performed without any danger and with great relief to the patient in all types of meningeal irritation.

The finding of a turbid fluid in a spinal puncture will place the cause of the meningeal symptoms under the first group and by microscopic examination, it is easy to determine the organism and type of acute meningitis present. This is of great importance inasmuch as the specific Flexner-Jobling serum is of benefit only in the acute epidemic type. The organisms are diplococci negative to Gram stain and found mostly within the leukocytes.

In the tubercular type and in polioencephalitis, the cerebrospinal fluid is clear, comes out under increased pressure, and has an increased number of leukocytes in the fluids. In the tubercular type, a fibrin coagulum settles on standing and in most cases, the tubercle bacilli can easily be found in this membrane. A leukocyte count of the blood will usually show a moderate increase of about 15,000 to 18,000 in the tubercular type, while the count will be normal or slightly above normal in the pre-paralytic stage of polioencephalitis or poliomyelitis, which at this time so frequently resembles meningitis clinically.

In meningismus the spinal fluid will be negative but the patient's symptoms will very often be promptly relieved by this simple procedure. The blood findings and the physical findings will depend upon the associated cause.

TREATMENT—Prophylaxis is most important to the community. According to R. Debre, 25 per cent of the persons in contact with a case of cerebrospinal meningitis will harbour the organisms in their nasopharynx without presenting any symptoms of illness. A gargle of one-half strength hydrogen peroxide and a weak alkaline nasal spray such as Dobell's solution should be used by all persons in contact with a case. Absolute isolation of the patient with the most rigid disinfection of the room, bedding, etc., is to be demanded in every case. Isolation of patients with a coryza during the course of an epidemic, with bacteriological examination of the nasal discharge should be carried out. It might also be advisable in case of a positive finding to give a prophylactic injection of serum.

In the Flexner-Jobling serum we have a specific agent that first, reduces the mortality from 75 per cent to about 20 per cent. Second, shortens the course of the disease materially, and third, reduces the complications and the terrible sequelae to a minimum. This should be immediately upon making the diagnosis, by injecting 20 to 30 Cc. of the serum into the spinal canal after drawing off that much or more of the spinal fluid. This is to be repeated every 18 to 24 hours until convalescence is noted or until four doses have been given.

Other therapeutic procedures are ice bags to the head and neck, hot baths to produce relaxation, and general care of the bowels and kidneys. Of medicinal treatment, aseptic fluid ergot in one-half to one c.c. doses hypodermically, every six hours, quiets the cerebral excitement by contracting the blood vessels and relieving the cerebral congestion. Small doses of morphine by hypo and sodium bromid by mouth or rectum is also indicated.

EDITORIAL

EPIDEMIC CEREBROSPINAL MENINGITIS.

At the time of this (January 15) considerable excitement is evident from the outbreak of epidemic cerebrospinal meningitis in the city of Dallas, Texas, certain other places in that state and in the southern counties of Oklahoma. It is to be hoped that the reports are exaggerated, but the gravity of the situation is attested by the fact that the trouble seems at this time to be slowly increasing. In October there was one, November seven, December 79 and from January 1st to 13th, there were one hundred and one cases of the trouble, the death rate running about fifty per cent.

Dr. A. Sophian of the Rockefeller Institute, who has been in Dallas assisting the local health authorities in the treatment of the disease recommends the following prophylactic measures:

The internal administration of from 40 to 60 grains, in broken doses of urotropin. In this connection it is interesting to note that Fullerton of Cleveland (*Journal A. M. A.* Jan. 13) states that "when the cerebrospinal cavities are to be protected the dose given may be as high as 200 to 250 grains daily though no doubt 100 or 150 grains are sufficient." The possibility of the drug being an irritant in such doses should be remembered. The thorough and continued cleansing of the nasal and naso-pharyngeal passages, and, of course, the maintenance of the general health and bodily resistance. The staff of the Dallas City Hospital including Dr. Sophian each took small immunizing doses of the Flexner serum intermuscularly, though this is not considered absolutely preventative and should be discouraged in view of the fact that the visible supply of serum in the United States and for that matter the world is very low when its possible needs are considered from the viewpoint of an increased and widespread epidemic.

A consideration of the etiology of the epidemic, is at this time, largely conjectural though it is known that the specific infection is the diplococcus intracellularis meningitidis of Weichselbaum and further than that just what elements or surroundings cause an epidemic is uncertain.

It should be remembered that we always have isolated cases of meningitis due to infection with the pneumococcus and from other infectious processes, but that does not make up or cause the epidemic form we are now dealing with. An examination of the spinal fluid of the Texas cases shows the presence of the Weichselbaum diplococcus practically in every case and not the presence of the pneumococcus, which fixes it properly as the epidemic type if the increasing cases did not convince one of that fact.

Perhaps the best thing a physician can do in the event of any case arising

in his practice is to insist on strict quarantine of the exposed persons and a thorough fumigation and cleansing of the premises.

The Texas cases are being treated symptomatically as is usual in such cases with the additional spinal puncture, withdrawal of the fluid in an amount of about 20 to 30 c.c. and replacing this fluid with the Flexner serum. The blood pressure is constantly recorded during the injection and if during the work the pressure falls approximately 20 mm the injection is stopped for a time and then continued or discontinued as the patient's condition warrants. Of course, throughout, the most rigid asepsis is maintained; the injections are given daily in the severe cases and correspondingly less in the milder types.

THE PROBLEM OF THE TUBERCULAR.

What to do with our tubercular people is one of increasing importance to the general public; a proposition that must naturally largely be worked out by the medical profession and the intelligent class of the laity.

The greatest drawback confronting the successful treatment and preventing ultimate success in tuberculosis, lies not so much in the lack of co-operation on the part of the patient, which is often a serious hindrance to success; it lies not in the failure of intelligent medication and dietetics, for they may be given without success, but every proposal of the physician and act for the betterment of the patient is so often rendered abortive from the fact that it is impossible to give the patient the surroundings and quiet necessary to a successful treatment.

In pulmonary tuberculosis rest, absolute rest, is more than any other consideration necessary for a cure; the brilliant results in the treatment of this disease are largely produced by rest plus other intelligent and co-operative measures in the hands of men who have sanitariums and can enforce the proper regime in their cases. On the other hand all who have given the matter attention are compelled to admit that their efforts have not been rewarded or if so very poorly when they attempt to treat these cases at home or allow them a little latitude in the way of pursuing their usual employment.

The problem of the whole matter lies in the fact that the rich and well to do can have the necessary surroundings, rest and treatment; can lay aside their struggle for existence and thus secure a cure or at least a respite from the disease, while the poorer classes must be content to take their treatment mixed with the struggle for bread, with the consequent lack of success which seems to follow untimely exertion, physical and mental exercise.

The poorer classes, by reason of this inability to care for itself remain a constant focus of infection and through them the disease is constantly re-appearing and new centres of infection made.

The state in some instances, charitable and philanthropic organizations in others, is establishing institutions for treatment of tuberculosis, but all their combined efforts are not enough to cope with the situation and they

should be supplemented by the establishment of an institution or institutions in each state sufficient to properly treat all classes and at least give the balance of power to the cause of prevention and limitation of the disease; each case that is cured means a lessening of the cause.

We are spending vast amounts of money for other purposes and undoubtedly we are paying less attention to the prevention of our preventable diseases, especially tuberculosis, than its importance warrants.

The moral influence of an institution radiates from the institution and the good it does in an educational way gradually spreads to all and makes prevention an easier matter for the people think about the subject and gradually give their aid.

Oklahoma has several naturally good locations from a climatic standpoint; we have some fairly high elevations and in some sections of the state sunshine is constant enough to be an item of value when one is considering the selection of a site for a tubercular home.

THE UNIVERSITY MEDICAL SCHOOL.

The Medical Department of the State University opened its hospital in Oklahoma City December 17th. It has a capacity of 64 beds, private rooms with bath, pay and free wards for both white and colored patients and is under the sole control of the faculty of the Medical School.

The hospital will maintain a lying-in ward to which patients will be admitted one month before delivery without cost and the profession is requested to refer to this department their obstetric cases having no home or proper place for confinement.

THE LEAGUE FOR MEDICAL FREEDOM IN OKLAHOMA.

As the medical profession understands the aims of the Owen bill it would seem improbable that in the Capital of the State the League of Medical Freedom should raise its head and attempt to mold public opinion in the home of Senator Owen; yet this is exactly what is going on and we are doing nothing to counteract the tissue of misstatement and misrepresentation they are scattering broadcast over the State.

As a profession bound by the traditions and conventionalities of the past we are hardly in a position to appeal to the public directly in the matter, at least such action is usually repugnant to the average medical man, but the provocation demands that we take some action to counteract the vicious propaganda being circulated from the headquarters of this organization in the Coleord Building, Oklahoma City.

No statement is too brazen, too devoid of foundation in fact or untenable from a scientific standpoint for this organization to make use of in the campaign of misinformation it is now purveying to the people under the guise of protecting the liberties of the people; they invade the home with their statements and these statements are going unchallenged, we should do something on our part to inform the people, for, untruth is very like vice, first scorned, then if forced on us, endured, and finally if constantly placed before us becomes fact instead of untruth.

BOOK REVIEWS.

Goepp's State Board Questions and Answers, by R. Max Goepp, M. D., Professor of Clinical Medicine at the Philadelphia Polyclinic. Second edition revised. Octavo volume of 715 pages. Philadelphia and London. W. B. Saunders Company, 1911. Cloth, \$4.00 net; half morocco, \$5.50 net.

This edition incorporates the questions asked by state boards during the last three years, the first edition covering the period of four years previous. The author has interpolated questions of his own at various places to maintain the continuity of the text. Many questions asked at final examinations in medical schools and by the examiners for hospital appointments are incorporated. The majority of new questions are those on serum and vaccine therapy; serum diagnosis and treatment of syphilis; chemotherapy in general; diseases due to intestinal parasites; tropical disorders; the new heart physiology; the myogenic theory, and graphic methods of study of the circulatory system. The state boards place upon the various branches of medicine and glean culation. The book cannot fail to be of greatest service to anyone approaching a state board examination, for many of the questions are repeated over and over again every year. The candidate learns the relative importance much concerning the customary style of presentation.

Diagnostic and Therapeutic Technic. Diagnostic and Therapeutic Technic. By Albert S. Morrow, M. D., Adjunct Professor of Surgery, New York Polyclinic. Octavo of 850 pages, with 815 original line drawings; 1911. Cloth, \$5.00 net. W. B. Saunders Company, Philadelphia and London.

This is one of the good books of the year and deserves a kind reception from the medical profession.

The author starts out with anesthetics, local and general and handles the subjects in an intelligent and comprehensive manner, the text is illustrated and most of the illustrations are original. The chapters on local and regional anesthesia are worthy of study.

The chapters dealing with the diagnosis of bladder, urethral and prostatic conditions are most excellent. The work throughout attempts to discard the unnecessary and unusual and adheres very closely to the practical needs of the physician. In this respect the work will be found especially useful to those in the profession doing surgical and semi-surgical work; the suggestions and advice is especially applicable to the different surgical procedures and a study of its teachings will reward the student to an unlimited extent.

Each step in the diagnosis of the different conditions considered is detailed carefully and nothing is left to the readers imagination; this feature alone distinguishes the work and makes it available and valuable to the surgeon as well as to the general practitioner.

OPHTHALMIC MYOLOGY.**A Systematic Treatise on the Ocular Muscles by G. C. Savage, M. D.,**

Professor of Ophthalmology (Defects in the Eye) in the Medical Department of Vanderbilt University, author of "New Truths in Ophthalmology," and "Ophthalmic Neuromyology," Ex-President of the Nashville Academy of Medicine, Ex-President of the Tennessee State Medical Association, Ex-President of the Southern Medical Association. Eighty-four Illustrative Cuts and Plates. Second Edition. Cloth, 685 pages, price, \$4.00 net. Published by the author, 137 Eighth Avenue, North Nashville, Tenn. Printed by the McQuiddy Publishing Company, Nashville, Tenn., 1911.

INTERNATION CLINICS, VOLUME IV, TWENTY-FIRST SERIES.

Edited by Henry W. Cattell, A. M., M. D., with the collaboration of many eminent American and European authorities. Cloth, \$2.00 net. Philadelphia and London. J. B. Lippincott Company, 1911.

This volume completes the series for the year 1911 or the Twenty-first Series. It is fully in keeping with the high class of its predecessors both in the variety and excellence of its varied productions.

Among the articles noted is one on The Modern Treatment of Syphilis, Modern Instruments of Precision in the Treatment of Cardiovascular Disease, Legal Facts a Physician Should Know in Surgical Cases. These articles are especially instructive, the first two being illustrated. Throughout the book contains a wide and useful class of contributions to recent medical subjects.

A DISTINCTIVE PIECE OF LITERATURE.

"Here is something different." This is apt to be the first thought of the physician upon breaking the wrapper of Parke, Davis & Co.'s new brochure on bacterial vaccines and tuberculins. And the external appearance of the book is in no wise misleading. The "difference" applies to the printed page as well as to the handsome cover in artistically blended browns and gold. The brochure contains forty-eight pages in addition to the cover and thirteen full-page engravings in colors.


The work is divided into three parts or sections. Some of the subjects considered in the first section are: "What is the Difference Between Bacterial Vaccines (Bacterins), Serums and Toxins?" "How are Bacterial Vaccines Prepared?" "Therapeutic Action of Bacterial Vaccines;" "When Should Serums be Used, and When Bacterial Vaccines?" The section treats of the origin and nature of the bacterins, the relative merits of "tsock" and "autogenous" vaccines, the opsonic index, and the best method of using the bacterins, together with a description of each vaccine, including references to preparation, therapeutics and dose. The third section is devoted to a con-

sideration of the tuberculins, with dilution and dose tables, descriptions and illustrations of the various diagnostic tests, etc.

Briefly stated, the booklet is a concise review of the essential facts relating to bacterial-vaccine therapy, containing precisely what the seeker after this kind of information wants. It is not padded with clinical reports—in fact, it contains none. We understand that Parke, Davis & Co. will be pleased to send a copy of this unique and valuable brochure to any physician requesting it. Address them at their home offices, Detroit, Mich., specifying the “new booklet on bacterial vaccines,” and mention this journal.

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DIAGNOSIS OF CARCINOMA OF BREAST.

J. Hutchings White, M. D., Muskogee, Okla.

Notwithstanding the large amount of literature from the press each year concerning cancer and urging early diagnosis and operative procedure, there are unfortunately many practitioners who still procrastinate or hedge on a diagnosis. Recently there came to my office a patient with a tumor of the left breast adherent to the skin and enlargement of the axillary glands, yet, according to her statement, three physicians advised delay in the operation. This case prompted this paper.

Nowhere does the early diagnosis and operative procedure offer more promising results in malignant cases than in breast cancers. To my mind there is no excuse for failure to recognize tumors of the breast and once diagnosed tumor all should be removed, benign or malignant, in the young or old—the extent of operation depending upon the character of growth. An incomplete operation for malignancy, unless performed in the early stages, is worse than no operation at all because in most cases it hastens the end rather than retards the growth. The fate of these unfortunate victims, of course, is in the hands of the family physician, who is first consulted and who should know and understand that all breast tumors are

malignant unless proven benign. According to Rodman 80 per cent of the cases operated on before glandular involvement recover without recurrences and only 25 per cent of those with glandular involvement are so fortunate. The teaching of wait and watch should be changed to act and prove that cancer is not present.

Some time since I saw a lady who had called upon her family physician with the statement that she was suffering with her shoulder. The doctor made no examination, but gave her a prescription for rheumatism and told her that was her trouble. She called again in a few days still suffering and requested an examination. Her physician said it was not necessary, that he knew what the trouble was and again prescribed a rheumatic mixture; she did not return. When I saw her the external half of her breast and the entire axilla was filled with a cancerous mass. She had passed that point where operative procedure would promise any more than temporary relief.

Again one finds those cases calling on a physician too late to promise a permanent result from surgery because some kind old soul has told her Mrs. So. and So. had an operation and "it came back." Then there is a general impression among the laity and unfortunately many physicians that non-painful tumors of the breast are not malignant. It cannot be too often repeated that malignancy in the early stages rarely produces pain.

Growths may occur at all ages. Cancer is found more often after 40 years of age. According to Rodman, however, in an analysis of 5000 cases 20.5 per cent or one-fifth of all cases occur in women under forty, 9 per cent between 20 and 30 and 11.5 per cent between 30 and 40. Dr. A. J. McCosh operated on one case, age 19 years; Dr. M. Richardson on one at 21 and Park and Warren one each at 22 years of age. The majority of cases occur between 40 and 60 and after 60 there is a sharp decline in the number of cases. Therefore the period of greatest liability is about or after the climacteric when the gland is undergoing functional decline. Married women are more often affected than the unmarried, and the fruitful man often than the sterile. Because of activity of lymphatics malignancy in young women is much more serious than in the old. More hope can be promised a woman of sixty, who has had a cancer for a year than a woman of thirty, who had one for three months. Is it not therefore important that tumors of breast in young women should be removed early? In waiting to prove a diagnosis of cancer by retraction of nipple, shortening of trabeculae and glandular involvement we make it impossible to cure over 25 per cent of patients. Tumors should never be treated medicinally. Cancer in the early stages is a localized disease, in the late stages it penetrates the lymphatic glands and distant organs.

While it is true at times that cancer may affect any part of the breast it is more frequently found in the axillary half than in the sternal

hemisphere. The upper and outer quadrant is more frequently involved than the lower and outer. Next is the middle portion of gland and it is this form of tumor that adhesions form and produce retraction of the nipple. Sarcoma and benign tumors are met with in the sternal half of the gland. A tumor that is slightly movable and disconnected with the skin is suggestive of malignancy. If on the other hand it is immovable and sufficiently adherent to the skin to cause retraction of the nipple or dimpling of the skin it is pathognomic of carcinoma. The fact that the nipple may be retracted from abscess at a prior lactation or the condition be congenital must not be overlooked. According to Rodman it occurs in only about 15 per cent of the cases of cancer of breast. Dimpling of the skin is nearly always present. Pinching the skin over tumor between thumb and forefinger will usually elicit this sign. Placing of the breast between the two hands and exerting gentle pressure toward one another will produce retraction of intervening portion of breast in malignancy and a bulging if there are no adhesions or shortening of trabeculae. Other changes in the skin and subcutaneous fat to be noted are ulceration and fungus formation.

The malignant tumor has a characteristic hardness and irregularity of outline which, to the experienced finger, is easily recognized. With a great deal of fat it is, however, with difficulty outlined. And when the nipple, skin and fat are unchanged it is with difficulty that malignancy is recognized. A definite infiltration of the breast about a more or less circumscribed tumor may be looked upon as evidence of malignancy. A malignant breast is drawn closer to the chest wall than the opposite gland. It is in this latter class of cases that we most often encounter the early involvement of the deeper organs.

Enlargement of axillary glands is a late symptom and one should never wait for that sign to clinch a diagnosis. Bloodgood says: "In my experience palpable glands in the axilla are of no aid in the early recognition of a breast carcinoma. When these glands are sufficiently hard and large to allow a diagnosis of metastatic carcinoma, there will be no difficulty in the diagnosis of the primary tumor. Palpable glands in the axilla are frequently observed in the benign tumors and inflammations."

Cachexia and changes in the general health as well as pain and metastases in the skin are symptoms and signs which even the layman cannot fail to recognize as indicative of early dissolution. Dr. Bloodgood emphasizes the importance of gross pathology and feels that one should recognize cancer cysts by their appearances. Bloody cysts with smooth walls are associated with carcinoma. Cysts containing granular or grumous contents one could be certain that there must be an epithelial tumor in the wall. In many of these cysts one can see or feel with the finger the carcinoma in the cyst wall. Notwithstanding the fact that we have what seems a complete picture and sufficient evidence to make a

diagnosis without proceeding further there is yet an element of doubt in ten per cent of breast tumors.

Dr. Rodman says: "It must be candidly admitted that in about 10 per cent of patients cancer of the breast cannot be recognized clinically in its early or operable stage, for in addition to the difficulty of differentiating between solid growths, it is even more difficult to distinguish between benign and malignant cysts. This can safely be determined only by the microscope and that it is necessary to be most careful in separating the one from the other no experienced surgeon will deny."

Every surgeon must be to a certain extent his own pathologist. As the diagnosis can be made in ninety per cent of the cases of tumors occurring in women in middle life from the gross appearances and as 90 per cent of these tumors are malignant or will become malignant the chances of a great surgical error are markedly reduced. We have nine chances to study the gross pathology of malignancy in these tumors to one chance in a benign growth.

Dr. Bloodgood remarks: "The problem in the treatment of every lesion of the female breast is the early recognition of carcinoma and its removal by the so-called complete Halstead operation."

"My own experience demonstrates that if the exploratory incision into such early carcinoma, clinically doubtful, is followed immediately by the complete operation, the probabilities of a cure are not diminished."

Women should be educated to seek advice the moment their attention is called to a tumor of the breast, to a discharge from the nipple, to any change in the skin or nipple.

Nothing save the microscope can determine positively the character of these growths. It should therefore be the duty of the surgeon to fully explain to patient that the extent of the operation will depend upon the examination of frozen section which is made by the pathologist at the time of operation. After removal of this specimen at time of operation the wound should be thoroughly cauterized by the actual cautery and plugged with gauze or by packing wound with gauze wet with Harrington's solution while awaiting report. Exploratory incision should never be made and not immediately followed by the complete operation in malignancy. That does not mean wait until specimens can be sent to a distant town for diagnosis but the whole or entire operation should be done at one sitting. The earlier the operation the greater the number of recoveries. Cases in which the axillary glands are involved are not so favorable as where these glands are not involved and axillary enlargement does not give as grave a prognosis as metastases in the supra clavicular glands. Tumors which produce retraction of nipple and dimpling of skin are more favorable operative cases than those adherent to the chest wall due to mediastinal glandular involvement in the latter class. Ulcerated breasts

are unfavorable cases. Malignancy with edema of skin and subcutaneous fat occurring in young women is rapidly fatal regardless of operative procedure.

I think it should be firmly fixed in the minds of every surgeon, that all breast tumors should be removed, that all breast tumors should be considered malignant until they are proven benign, that delay in operation after diagnosis is a fatal mistake, that these tumors should never be incised for specimens unless immediately followed by complete operation in cases of malignancy, that they are surgical cases and should be treated by the surgeon.

BRONCHO-PNEUMONIA.

P. P. Nesbitt, M. D., Muskogee, Oklahoma.

Broncho-pneumonia, catarrhal-pneumonia, or capillary bronchitis as it is variously known, is perhaps the most frequent of any of the serious diseases of children encountered by the practitioner in this climate at this season of the year. It is an infectious disease due to various organisms. The most common of these, the pneumo coccus, streptococcus, staphylococcus aureus and albus, the tubercule bacillus, colon bacillus, influenza bacillus, and when epidemic meningitis is prevalent the meningococcus.

This disease is usually encountered in children under five years of age; it is less common in older children, rare in healthy adults, but fairly common in weakly adults and in the aged. Statistics show that it causes more deaths in children under five years old than any other disease or group of diseases, excepting only the gastro intestinal diseases. Broncho-pneumonia develops as a primary infection in about 35 per cent of all cases, in the balance it is an extension of a diseased condition of the upper air passages and the larger bronchial tubes. It is most commonly encountered as a complication or sequel of measles, whooping cough, diphtheria, influenza, tuberculosis, and infection of the gastro intestinal tract.

In cases in which only one organism is found the pneumo coccus is almost always the infecting agent, but occasionally the streptococcus or the staphylococcus are encountered alone; this class, however, is comparatively small as there is usually a mixed infection.

Pathologically the disease shows an injection and swelling of the lining membrane of the bronchioles with a tough adherent muco-purulent covering; this muco purulent exudate invades adjacent alveoli, thus forming a small area of consolidation. These consolidated areas are most numerous near the surface of the lung and frequently several of these unite to form a consolidated patch large enough to produce dullness or percussion. These diseased patches are usually found throughout both lungs, but are most numerous posteriorly near the base. As stated, the exudate is usually muco-purulent in character and only occasionally in case of a pure pneumococcus infection, do we find the fibrinous exudate characteristic of lobar pneumonia.

In many of the primary cases the onset is sudden, beginning with a chill or convulsions; temperature rapidly rising to from 102 to 105; a harsh dry cough, quick, labored breathing, often with an expiratory grunt. In the secondary case the onset is usually slow and is a gradual extension of the existing bronchitis, with corresponding rising temperature, the breath-

ing becoming more rapid, cough harsh, dry and more frequent. The course of the disease is the most variable of any of the complaints of childhood. The majority of the acute cases of pneumococcus infection follows the ordinary course of lobar pneumonia and terminate by crisis in from four to twelve days, but the secondary infections last usually from ten days to many weeks, terminating by lysis, frequently marked by recurrence, and may even become chronic. The latter condition is almost constant in the tubercular infections in which the patient lives for any length of time.

On inspection a marked retraction of the intercostal spaces during inspiration may be observed. On percussion a hyperresonance is often found except over the larger consolidated areas where there is more or less dullness. On auscultation crepitant, sub-crepitant, fine or coarse moist rales are found, depending on the stage of the disease and amount of consolidation. Where there are large areas of consolidation bronchial breathing may be heard. Vocal fremitus is always increased.

The diagnosis is often difficult in the early stages of the disease. But later the continued fever, dyspnoea, character of cough and distribution of the disease process in the lung makes the diagnosis fairly easy and certain.

The prognosis is always grave. As before stated broncho-pneumonia causes more deaths in children than any disease except the acute gastrointestinal infections. The death rate varies from about ten per cent in previously healthy children under the most favorable surroundings to eighty per cent or sometimes practically 100 per cent in children weakened by previous disease and under unfavorable conditions. The infective organism plays an important part in determining the prognosis; the pneumococcus and staphylococcus infections being the most favorable; the streptococcus, influenza, diphtheria, and colon bacilli having a higher death rate; and the meningococcus and tubercle bacillus infections being practically all fatal.

The most important consideration from the practitioner's viewpoint is the treatment. This, as in most other diseases, resolves itself into prophylaxis and the treatment after the disease is developed.

A great deal can be accomplished by proper care and treatment of the infective diseases of childhood to prevent development of broncho-pneumonia. In diphtheria the early administration of sufficient doses of antitoxin and measures to keep the throat as free as possible from the infective discharges that accumulate, there will assist materially in lessening the danger of an extension of the disease to the lungs. Similar care should be taken of the throat in scarlet fever. These are conditions in which the physician has usually been consulted and can direct the treatment. However, a great majority of cases develop from measles, whooping cough, influenza, and bronchitis from common colds. Conditions in which so often the physician is not consulted until the more serious complication is

developed. In such instances as the physician is consulted, he should impress upon the parents the importance of cleansing the nose and throat of all discharges, of the necessity of abundance of fresh air without exposure to draught, and above all to consult the physician at once where the temperature or cough seems to indicate an extension of the infection from the throat or larger bronchial tubes to the bronchioles.

In considering the treatment of bronchitis I wish to call attention to the use of Hexamethylenamin as advocated by Dr. Douglas Vanderhoof.* Since reading his article I have tried it as recommended in treating a few cases and they have done remarkably well, but, of course, the number of cases in this short time are not enough from which to form a definite conclusion. Another drug I have used with success for some time at the suggestion of Dr. I. B. Oldham, is small doses of bichloride of mercury combined with ammonium chloride in a cough mixture.

In the treatment of Broncho-pneumonia there are many points to be considered. As the disease is caused by so many different organisms it is evident that specific treatment is not applicable except in a few cases. If the diphtheria-bacillus is the infective organism, the diphtheria antitoxin will give good results, but usually not so brilliant as in diphtheretic infection of the upper air passages, due probably to the fact that other organisms are usually present. Anti-pneumo-coccic, anti-strepto-coccic, anti-staphylo-coccic serums may be used where the infection is due to these bacteria but their use has not been proved to be especially beneficial.

The treatment which has been accepted for several years as the best by most physicians has been the "Fresh Air Treatment" with such additions as are made necessary by the symptoms. The patient is kept in a room where an abundance of fresh air is admitted; this, however, should be done without producing a draught. A fire should be kept burning to keep the temperature at from 68 to 70 degrees Fahrenheit. A basin or kettle of water should be kept on the stove to keep the air of the room moist. To this may be added eucosote or compound tincture of benzoin.

For the temperature, it is rarely advisable to use the coal tar antipyretics. Aconite combined with sweet spirits of nitre can often be used with excellent results in the earliest stages of the fever; after this the temperature is best controlled by "hydrotherapy." Cold baths are very beneficial when they are well borne, as they not only reduce temperature but also cause deeper breathing. However, many patients will be found in whom the cold baths chill the surface without lowering the internal temperature. In this case, warm baths and hot mustard bath is especially good as it has a tendency to loosen the cough and relieve dyspnoea in the same manner as flax-seed poultices and is without the disadvantages of the latter. An obstinate temperature can often be better controlled by enemata than by external application of water.

*The Journal A. M. A., February 3, 1912.

For the cough a stimulating expectorant is sometimes of advantage, but cannot be relied upon to give relief in all cases. The best of this class of expectorants are chloride of ammonia and aromatic spirits of ammonia. Occasionally ipecac acts well. Given in large enough doses to produce emesis it will give relief by relieving the stomach of the mucous which has been swallowed, and also force the mucous out of the larger bronchial tubes. However, it is not desirable to keep the patient constantly nauseated. Along the line of treatment for the cough it is well to remember here also the use of Hexamethylenamin and bichloride of mercury.

As circulatory and respiratory stimulants the aromatic spirits of ammonia, whiskey or brandy, strychnine, digitalis, and camphor are recommended. The most reliable of these is camphor in olive oil, given hypodermatically. For extreme cyanosis and dyspnoea oxygen inhalations often give remarkable relief.

The diet should be light but nourishing and it is not necessary that it be confined to liquids. Plenty of water should be taken to stimulate the action of the kidneys and the bowels should be kept moving freely. This is especially necessary in children as they swallow almost all of the mucous that is coughed up into the throat, and it is not desirable that this be retained in the gastro-intestinal tract. The best cathartic for this condition is castor oil and should be administered once or twice daily.

Probably the most important factor in the successful treatment of broncho-pneumonia is in the care of the patient. For without intelligent co-operation of the parents or nurse no treatment will be successful and with the proper care sometimes a seemingly hopeless case will recover.

DIAGNOSIS AND TREATMENT OF DIPHTHERIA.

Dr. A. B. Montgomery, Muskogee, Oklahoma.

Diphtheria is an acute, infectious, contagious disease due to the Klebs Loeffler Bacillus. The incubation period varies from a few days to two weeks. It is most common between the ages one and six years. The first indication is an inflammation usually of a mucous surface with the formation of a false membrane. It may involve any of the mucous surfaces. Constitutional symptoms follow the local ones. Malaise chilliness, aching limbs. The temperature is usually low. There is some swelling of the cervical glands. The breath has a characteristic odor. The membrane commonly occurs first upon one or both tonsils as a grayish spot, which spreads to the soft palate and pharynx. This membrane appears to be imbedded in the mucous membrane and is yet raised above its surface. Its detachment causes bleeding. As the membrane becomes older it grows darker in color to brown or even blackish. Temperature usually falls on second or third day. May even be sub-normal with a profound toxemia. The urine usually contains albumen and often tube casts. It may be very scanty, or suppressed, as I have seen it in a few serious cases. In favorable cases membrane ceases to extend after three or four days and there is no extension to the larynx. The pulse rate is not over 120. In unfavorable cases membrane may extend up into nasal fossea, producing a thin, bloody excoriating nasal discharge. It may also extend up into the ears through the Eustachian tube or down into the larynx, producing laryngeal stenosis. The symptoms of laryngeal stenosis are hoarseness with rapidly increasing dyspnoea. Inspiration is noisy and stridulous. All the accessory respiratory muscles are brought into action.

In other unfavorable cases the throat symptoms are not dangerous, but suppression of urine with uremia occurs. Positive culture tests, showing K. L. B. confirms diagnosis, although the absence of the K. L. B. does not disprove diphtheritic infection.

Prophylaxis. Every child with a sore throat should be isolated and closely observed until a diagnosis can be made. Culture tests should be made not only from all suspicious cases but in all cases of sore throat with a history of exposure for it is a well known fact that diphtheria may occur without membrane formation. Quarantine in cases of diphtheria should not be raised until two successive cultures, made at three to seven day intervals, prove negative.

Treatment: Every child between the ages of one and ten years with a suspicious patch of membrane upon the tonsil should be given anti-toxin.

In young children we can not wait for a positive diagnosis. The extension of the process to the larynx is so rapid and so very dangerous to life and being especially prone to occur between one and eight or ten years we must not temporize. In all cases in which no antitoxin has been given and secondary laryngeal involvement has occurred, as betrayed by a reddened pharynx and tonsillar area with necrotic exfoliating membrane with dyspnoea cyanosis and all evidences of laryngeal stenosis, antitoxin must be given in heroic doses, 7-10,000 at once, repeated every six hours until decided improvement is noted or death occurs. A practical point in this connection, too, is the fact that antitoxin intra-muscularly administered is more promptly absorbed than when given sub-cutaneously. The heart should be looked after and the proper stimulants administered, preferably hypodermatically. Moist inhalations or calomel fumigation may temporarily relieve the stenosis until the antitoxin has time to produce its effect. These failing, intubation or tracheotomy should be performed. All laryngeal cases should receive not less than 5000 units of antitoxin as an initial dose and if seen late not less than 10000 intra-muscularly repeated every six hours if necessary. Antitoxin has very materially reduced the diphtheria mortality. It is a reproach to the medical profession that so many young children are still allowed to die with a diagnosis of membranous croup, who have had no antitoxin or it has been administered too late in insufficient dosage. Antitoxin properly administered not only saves lives but prevents sequelae, such as post diphtheretic, paralysis, cardiac degeneration and nephritis and removes the indication for intubation and tracheotomy in the vast majority of cases.

Antitoxin saves 75 per cent of cases formally diagnosed membranous croup, whereas without antitoxin 75 per cent die. Is any further argument necessary.

RELATIVE FREQUENCY OF THE MIXED TYPE OF VENEREAL ULCER. (Chancroid and Chancre.)

Dr. J. Hoy Sanford, Muskogee, Oklahoma.

The mixed type of venereal sore is not an uncommon infection, in fact the frequency of such types of venereal ulcers are becoming so common that a diagnosis should be held in reserve until the patient has been under careful observation for at least four weeks, and a good rule to make a practice of is, to be suspicious of syphilitic contamination in every sore about the genitals until a certain period of time has elapsed, thus enabling you to carefully observe the ulcer so as to watch for the characteristic chancre development which will be manifest in at least 90 per cent of the cases where syphilis is present in from three to four weeks, and in the remaining 10 per cent of cases, syphilitic infection may be present without the characteristic chancre development and thus an innocent and harmless looking sore give rise to the constitutional manifestations of syphilis.

So many of us make the mistake of making a diagnosis from the first appearance of the ulcer, as the mixed type of infection usually presents the chancreoid characteristics without the slightest suspicion of syphilis being present. Time alone can eliminate the development of the chancre, and a diagnosis should not be given until some weeks have passed, I usually wait four weeks from the time of the appearance of the ulcer. The so-called hair cuts deserve special mention in regard to a delayed diagnosis, as it is not at all uncommon to observe a perfectly harmless looking skin abrasion, no doubt originally due to a hair cut, assume typical chancre development and constitutional symptoms of syphilis become evident. I will report a case of the above type (hair cut) which will illustrate the point I am trying to bring out in this paper, that is, delayed diagnosis in all venereal ulcers the best rule to follow.

Case—male—age 35—occupation, capitalist, consulted me in May 1911 with what he called a simple hair cut. Patient said he frequently had such conditions but this one seemed a little stubborn to treatment, (calomel powder) so he thought he had best consult a doctor. Examination showed a small ulceration just back of the corona glandis, slightly tender, devoid of induration and discharge, with no glanular enlargement associated, and the ulcer had no tendency to spread. It was truly an insignificant looking sore but I was careful in my diagnosis and told the patient I would have to observe him to make sure a mixed type of infection was not present, at the same time explaining to the patient what a mixed type of infection meant. Patient became indignant at the idea of possible syphilis contamin-

ation, saying he had had such hair cuts quite frequently. To be exact, 25 days later a typical indurated base became evident with slight associated inguinal enlargement. The sore had healed perfectly but the hard snout like base persisted as did a bluish or copper color about the scar tissue. I told him of my suspicion of syphilis infection and was verified in the diagnosis by a roseola eruption developing, associated with general glandular enlargement, mucus patches, and slight tonsillar ulceration. Wasserman reaction came back positive.

We have cases the opposite from the one just described which are perplexing and confusing, due to the ulcer having been overtreated or mistreated by the patient or some kind friend. I have reference to cases that we frequently see where undue cauterization with pure stick of nitrate of silver has so destroyed tissue as to set up an inflammatory condition that greatly simulates the feeling of chancre induration, and thereby lays the physician liable to error one way or the other. True Chancre development may start at a later date, and an already existing inflammatory base due to cauterization allow the chancre induration to go unnoticed. The condition of phimosis will cause chancreoid ulcers that are beneath the foreskin to assume an indurated base somewhat similar to chancre, as will undue cauterization with actual cautery or fuming nitric acid. All these conditions go to make an early diagnosis doubtful; so much so that the patient should be made to understand what careful observation of the ulcer and reservation of the diagnosis mean to him.

In taking up the treatment of the ulcer, I can only say that the methodic treatment of cleanliness, antisepsis and rest, proves most effective in healing the sore, and at the same time does not have a tendency to more or less confuse the already uncertain diagnosis, like over zealous cauterization and the application of irritating powders will do. Cauterization cautiously applied is the treatment par excellence in most any venereal sore, with the exception of a typical Chancre, and in that condition it is contraindicated. The selection of the cauterizing agent is important, the actual cautery and fuming nitric acid taking first place, and the stick of nitrate of silver last place. Wet dressings of bichloride of mercury, one to five thousand, and carbolic acid two per cent, seem to act best when the ulcer is situated on the integument, while dusting powders act best on ulcers beneath the foreskin, though a combination of wet dressing in the day and dusting powders at night while patient is in the recumbent posture, seems to work admirably with ulcers beneath the fore-skin. Powders under a long fore-skin seem to act badly while patient is up and about, particularly is this true if his occupation requires him to stand or walk during the day. Powders do not act well on ulcers on the integument as the powder exposed to the air dries, sticks fast, and tears open the wound when the dressing is changed.

Conclusions: (A) Treat all venereal ulcers with suspicion of possible syphilitic contamination until a reasonable length of time has passed for the development of the hard indurated base attending chancre contamination.

(B) Avoid over-zealous cauterization and the application of strong irritating powders, as you are certain to confuse the diagnosis by the induration that necessarily goes with undue cauterization and the application of irritating powders.

(C) Explain to every patient the frequency and possibility of a mixed ulcer and what you mean by a "mixed sore," and in so doing the patient will be better able to appreciate your careful and watchful efforts as well as your conservatism.

(D) Do not make the mistake of beginning constitutional treatment for syphilis by the appearance of the sore, for some very suspicious looking scars prove to be inflammatory tissue due to cauterization and not true chancre scar.

(E) Watch for the bluish copper color associated with indurated scar tissue following the healing of a suspicious venereal sore, the shot like feel, and the absence of pain of such scar tissues.

(F) Resort to the Wasserman test should the constitutional manifestations of syphilis be so slight as to leave some doubt about the diagnosis.

CEREBROSPINAL MENINGITIS IN THE INFANT.

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The diagnosis of cerebro spinal meningitis in the infant is often a matter of some difficulty. Every infant suffering from digestive disturbance should be thoroughly examined. This applies especially to the nervous system. Lumbar puncture should not be omitted. We must get rid of the idea that every baby is a "belly." Many affections have been called gastro-enteritis with fever, or septicaemia with diarrhoea which are really cases of overlooked, unrecognized cerebro spinal meningitis. On the other hand we must be on our guard and not confuse with this disease certain conditions associated with fever, intense restlessness, insomnia, crying, Kernig's sign and stiffness of the neck. Spinal fluid is negative. We may have bulging of the fontanelle and rapid pulse up to 160. These symptoms are often associated with dentition and digestive disturbances. Kernig's sign is, however, not persistent. This phenomenon, Kernig's sign, is met with in other diseases, especially in broncho-pneumonia, Barlow's disease, septicaemia and pneumonia, but its specific significance as a diagnostic point in cerebro spinal meningitis is in its persistence. Given a case of cerebro spinal meningitis in the infant and the usual symptoms present are, restlessness and vomiting. As the restlessness increases the vomiting decreases. There is usually a diarrhoea, **never constipation**, so that the general aspect is that of gastro enteritis.

Strabismus, inequality of the pupils, bulging fontanelle, a sign of hypertension of the cerebro spinal fluid, which often disappears after lumbar puncture, herpes facialis and labialis erythema and purpura.

The disease runs from five to thirty days or more. Recovery, when it takes place is slow and there may be relapses. On the other hand, recovery may be rapid and uninterrupted. This, however, is the exception and not the rule. We often meet with optic atrophy, followed by blindness. Deafness, due to oedema or neuritis of the auditory nerve. Also ocular paralyses and paralysis of the limbs. Cerebro spinal meningitis does not always present the same clinical picture. For instance, the tetanic form is characterized by the classical signs of tetanus. Stiffness, Chvostek's sign and digestive disturbances. Again we may have the **convulsive form**, which accounts for the death of certain children in apparent good health but in whom the temperature suddenly runs to a high point. Convulsions and death follow.

The fever is attributed to the convulsions. Post mortem shows the disease to be cerebro spinal meningitis. Further, we see the **paralytic form**. No stiffness of the neck muscles, on the contrary they are paralyzed. The head flops around in any direction, like that of the new born infant in whom the muscles have not yet acquired their tonus. Other symptoms are like the preceding forms. Another form has been described and named by English Authorities as **simple posterior basal meningitis** of infants, characterized by its subacute course and frequency of blindness and stiffness of the muscles of the neck. No doubt many of the deaf and dumb and blind children owe their infirmities to an attenuated attack of this disease.

Another form, a **cachectic form**, if you please, in which we find a wide range of temperature that recalls the chart of suppuration. In these cases the infant wastes to a skeleton in the course of a few days. Finally, the **hyperesthetic form**. Here the child does not bear the appearance of being ill, it is quiet but the least irritation or stimulation gives rise to muscular contractions, genuine epileptoid convulsions. There is hyperesthesia without obvious stiffness. The disease lasts ten or fifteen days and is generally fatal. Shall we employ spinal puncture as a routine method in our examinations? Done under proper aseptic precautions no harm comes from it, therefore it must rank first as **the** diagnostic procedure. A sign that is valuable in determining as to making the puncture may be elicited as follows. Take the naked child just below the arms and hold it in the air with the legs hanging. The healthy child kicks the legs about, whereas an infant suffering from rigidity keeps them flexed. Examine carefully every vague stiffness of muscles, every abnormal muscular rigidity, especially if the stiffness or rigidity persists. The **prognosis** of cerebro spinal meningitis in the infant is dependent on early diagnosis, thereby we being enabled to apply serotherapy at the onset of the attack, excellent results are often obtained. The treatment must be intensive, we must not hesitate to administer large, repeated doses of the serum. This is the only means of obtaining recovery and avoiding anaphylactic complications. In those unfortunate cases where relapses take place it might be well to recall the article of Ritchie (Edin. Med. Journal), June 1910, in which he relates an interesting case of a patient in whom the intraspinal injection of the serum gave great benefit, but it did not prevent recurrence. Accordingly seventeen millions of meningococci, prepared from cocci derived from the patient's own spinal fluid, and killed by the addition of 0.25 per cent of pure carbolic acid, were subcutaneously injected. Nine days later a second injection of the same strength was given. After eight days thirty-four million were given and again in seven days fifty-one million cocci were injected. There were no further attacks of meningitis, the patient leaving the hospital one month later well. Ritchie supposed that some focus of infection had remained somewhere in the cerebro spinal meninges.

PRESENT STATUS OF CANCER PROBLEM.

Fred J. Wilkiemeyer, A. B., M. D.

Of what value are the various theories concerning the etiology of cancer? Some years ago, Virchow suggested that the development of cancer is due to the elements of the tissue returning to the embryonic state. This theory is no longer acceptable. We next have the parasitic theory, to the support of which are a few questionable cancer-houses; (1) doubtful epidemics of carcinoma among fish, isolated cases of supposed infection from husband to wife; (2) against all this we have the careful and painstaking observations of Bashford (3) and his co-workers at the Imperial Cancer Research Laboratories. A hundred thousand or more cancerous and non-cancerous mice were closely housed. The observations covered seven years, in which all known laws of infection and means of transmission were brought into play. Yet not a single case of infection could be traced among the mice or attendants. Consider the well-known fact of the susceptibility of savages to infectious diseases on first contact with civilized man. We know of no sudden increases of cancer-deaths as a result of such contact. One cannot disregard entirely infection. It is possible infection, by lowering vitality, breaks the equilibrium of the growth of tissues, viz.: J. Bride (4), in an examination of 8,000 sewer rats, 11 were found to have sarcoma of the liver, and in all but one cysticercus was found in the tumors. One had 5 cysticerci in the liver, each of which had given rise to a small sarcoma.

We have next to consider Cohnheim's well-known hypothesis, "Cancer is due to the inclusion of non-differentiated cells in the midst of adult elements." This would mean the non-differentiated cell, potentially, possesses more power than adult elements. Being non-differentiated, it could form meso-dermic, ectodermic and endodermic tissue. Indeed it could do all sorts of flip-flaps, today a sarcoma, tomorrow a carcinoma. The observations of Bashford (3) seem to disprove Cohnheim's theory in its entirety. Cancer growth disobeys all laws of embryonic tissue; moreover, during its growth, there are periods of pronounced histologic differentiation and again periods when this differentiation is absent. Indeed when a carcinoma is transplanted, it takes on a new vascular and connective tissue scaffolding. In other words the cancer cell is an highly specialized cell and not undifferentiated. Consider for a moment the ovum; it is capable of giving rise to all the tissues of the body. The cancer cell tends to lose the characteristic of the tissue from which it is derived. The initial proliferation which leads to cancer is not limited to a single cell or a small number of cells. It is true, cancer cells in the beginning

are circumscribed; but a circumscribed area does not in any sense mean confined to one cell. Bashford's (3) experiments starting with mice suffering naturally from the disease and relieved of tumor by operation, have yet to show an indication of inborn predisposition. Is Cohnheim's theory untenable? Recently Wm. J. Mayo (5) in his notes on Italian Surgery, reports work done by Prof. Fischera. Fischera starts off with the following hypothesis, "As cancer is due to the unlimited production of embryonic cells, an extract from embryonic cells furnishes the necessary check to the production and the tumor is then removed by normal processes." This would in a way favor Cohnheim's theory. Accordingly Fischera took 2 to 6 months human embryo, crushed them and put them in a salt solution, until they were dissolved by autolysis. The solution was then injected into patients suffering from cancer. Mayo reports in detail 3 cases of inoperable, very malignant growths; diagnosed microscopically and clinically by competent observers.

To the great body of observers the chronic irritation theory holds the greatest element of truth. This theory assumes, in the course of ulceration the tendency of repair in epithelial tissue is towards proliferation of the epithelial cells; normally when repair is accomplished, proliferation of the epithelial cells ceases. If for some unknown cause, the proliferation runs riot we have cancer formation. For sarcomatous formation the same analogy holds good. An incised wound tends toward proliferation of scar tissue. If the proliferation of connective tissue runs riot we have sarcomatous formation. While the theory does not explain the sudden metamorphosis from normal to cancer changes, it has been of tremendous value to surgery. That chronic irritation does play an important role, we have the observations noted in all countries. In Ceylon and India we have carcinoma of inside of mouth; a condition more common among the women. In Ceylon the women are in the habit of chewing betel-nut and sleeping with the plugs in their mouths. Among the inhabitants of Kashmir we have Kangri-burn-cancer. E. P. Nye (6) reports during 25 years of 4,912 tumors removed in the mission hospital, no less than 1,720 were malignant and of these 1,789 were epitheliomata, 848 were due to the irritation of the Kangri; a portable fire basket carried by the people under their clothes. When sitting down this rests against the inner sides of the thighs or the front of the abdomen. The epitheliomata have a particular predilection for these sites. The disease is twice as common in man as in woman. In Asia among certain tribes, we are told, a carcinomatous condition of the left horn of the domestic animal is quite common. In plowing, it was noted, the harness is attached to the above horn. Again we have the X-ray cancer in man. Graham (7) reports 59 per cent of carcinoma of stomach have an ulcer basis. Carcinoma of the gall-bladder (8) is invariably found associated with stone. Diverticulitis of the intestine (9), in the vast majority of cases, is found associated with cancer of this region. Hypertrophy of

the prostate goes hand in hand with carcinoma of the gland. Carcinoma of the mammary gland more common in woman than man. Carcinoma above the stomach more common in man than woman, while below the stomach woman gains the ascendancy.

Yet we have wide, unexplainable gaps. Is the carcinomata noted in obliterative appendices a true carcinoma? If so, why is it metastasis of the caecum has not been noted? Mammary tumors, in certain species are quite common (3), while in closely allied species this does not hold, viz: carcinoma of the mamma very rare in the cow (3), where we would expect much irritation. On the other hand carcinoma of the mamma quite common in the human, the dog and the mouse. Argue what way you will, you cannot lose sight of the role played by chronic irritation.

Recently Prof. A. von Wasserman (10) "reports some interesting and new studies on cancer. The preliminary report appears to bring into play, the chemical theory of which Ehrlich is the father. The principle consists in finding substances which have a greater affinity and toxicity for tumor cells. He started out originally to determine whether carcinoma cells removed by operation, could live longer in the blood serum of cancer patients than blood serum of healthy patients. As an indication of the cell's vitality, he selected sodium tellurate and sodium seleniate. In the presence of living cells, the above salts are reduced to metallic form and become precipitated as a sediment. It was shown that the salts were reduced in both serums, showing the cancer cells retained their vitality. Most remarkable, they found selenium and tellurium were precipitated only in the cancer cells. The above experiments seemed to prove that selenium and tellurium had a specific affinity for cancer-cells. Accordingly solutions of the above salts were injected locally into tumors of carcinomatous mice. As a result softening and liquefaction of the tumor occurred. Next they determined to attack the tumors by way of the blood and in this way saturate all tumor-cells. The mouse tumor being poorly vascularized, it was necessary to find a preparation which would diffuse through the tissue. After many trials they selected a dye of the fluorescein group, Eosin. They accordingly formed a compound of Eosin and selenium and injected same into the caudal vein of a mouse suffering with cancer. Repeated injections caused softening and disintegration of the tumor and in ten days there was rapid disappearance of all remnants of the tumor."

Is cancer becoming more prevalent? It is certainly doing so. Previous to Bashford's report it was thought cancer was quite rare among aboriginal races and as to cancer among the lower vertebrate kingdom, why, it was unheard of. When the laboratory men started their experiments on animals, there was much pessimism shown. Today we find hundreds of thousands of mice suffering from the disease. At the Budapest congress Bashford (3) showed slides of cancer from the previously quoted

regions and also slides from the skin of birds, amphibia, fishes. We must qualify our remarks and state, newer, more exact methods and more careful observations are bringing to light more cases. Among aboriginal races, it's a case of survival of the fittest; while a few of the hardy-type reach a very advanced age, the average age death is below that of civilized man. Thanks to modern preventative medicine and surgery more men reach the cancer-age. Before the introduction of ether and modern asepsis, operations of the abdominal cavity were unheard of. Today we have reached the elective stage of surgery. Take for instance carcinoma of the prostate gland (11). Thompson in 1854 cited but 15 cases from English and French literature. Today we find the disease cannot be ruled out in any cases of hypertrophy of the prostate. Wilson & McGrath (11) report in a series of 250 enlarged prostates 68 carcinomas. Belafield (11) observes 10 per cent. I have a slide of a prostate, sections of which for several years had been distributed by Prof. Wm. Councilman among the students of his pathology class. The sections were considered an excellent example of hypertrophy of the prostate. When the sections reached our class, we found at one end of the slide typical carcinomatous changes.

How can we combat cancer? Combine statistics as to age incident, habits, environment, special sites of predilection and clinical symptoms and note the lesson. As to age incidence, we find the greatest frequency to be between 45 and 49 years (18 per cent), 0.3 per cent before the age of 23 years. After the age of 70 years frequency 8.5 per cent. **Special sites of predilection:** Duhrssen (12) states 25,000 women die annually in the German Empire from carcinoma uteri or three times as many as die in child-bed. In the U. S. (12) cancer kills more than any one puerperal cause.

Carcinoma uteri exceeds all forms of carcinoma in frequency (12). Welch (12) estimates 1-5 of all primary cancers are situated in the stomach and less than 1-3 in the uterus. McGlinn (12) recently showed out of a total 140,088 deaths from cancer, the stomach and liver were the seat in 36.4 per cent. Female-genitals in 14.7 per cent. American statistics (12) show the stomach to be the site in 43 per cent in males and 24.47 per cent in females. Virchow stated the stomach was the primary seat in 34.9 per cent of all cases. According to U. S. statistics one woman in 90 dies of cancer uteri and one in 30 after she reaches 35 years; of 2,291 cases of cancer uteri, 1,551 or 67 per cent occurred immediately during or after the climacteric, i. e. between 40 and 64 years. Taking the mortality statistics of England and Wales (3), among males the stomach invaded 22 per cent of fatal cases, liver and gall-bladder 13 per cent of the whole, rectum 10 per cent, intestines 8 per cent. Looking at the above as a whole, we find they represent 2-5 of total cases in the national statistics. Among females mamma and generative organs are affected in more than 2-5 of the total fatal cases. Consider tumors of the breast, 85 per cent are malignant to begin with and 1-2 of remaining 15 per cent

will become malignant. How frequently do fibroids of the uterus undergo malignant changes? At the very outset we can say, malignancy is very rare. Noble (13) reports 2 per cent in 2,274 collected cases, while he himself found it twice in 337 cases. We must, however, consider complications. Winter (13) reports 266 cases of fibromyomata, with definite heart symptoms in 30 per cent of the cases. Dilatation and hypertrophy 6 per cent, organic valvular disturbance 1 per cent. Boldt (13) reports 79 cases with cardio-vascular disturbances. Baldy (13) 366 with cardio-vascular disturbances in 25 per cent. Flecks (13) series of 133 cases, heart symptoms occurred in 34.6 per cent and none had symptoms of hemorrhage. We must also remember the danger of malignancy increases with age. Unfortunately the symptoms of carcinoma of the stomach and digestive tract are not as clear cut as one would have them. Stomach analysis, while often misleading, is of some value. Compliment fixation, tryptophan, serum and hemolytic tests, X-ray examinations are of little value. Graham states 51 per cent of carcinoma of stomach occurred on an ulcer basis. Chronic and acute histories are about equally divided. Given a man past 30 years, previously enjoying excellent health, suddenly developing stomach symptoms, cancer must be considered. He need not have any loss of weight, he may have a temporary gain in weight under dieting; a palpable tumor is very rare; visible peristalsis, stasis and cachexia are late symptoms. Neurotic conditions are not formed late in life. If there is any one place where cancer shows its insidious onset, it is the lower tract. Nov. 23, 1911, a gentleman, on entering my office, greeted me with the remark, "I have piles." Asked how he knew it, he replied, "I felt it." I made a rectal examination and found a cobble-stone prostate, the size of a grape-fruit; the middle lobe projected into the rectum; high up over the left lateral wall I could just palpate a growth. The man had absolutely lost no weight; on cross-examination, he denied his bowels were constipated; urination was little or not at all affected; he never used a catheter; was able to attend to his business as well as ever. Three days later he again called on me and for the first time admitted taking salts every day. December 9, 1911, he entered the Mayo Clinic with acute retention. Dr. Judd attempted supra-public drainage, but owing to the tumor lying anterior to the bladder, he was obliged to do a perineal section. In the lower tract constipation is almost pathognomonic, at any rate the patient should be watched. Tumor, flatulence, colics, loss of weight, come later.

In women menorrhagia after or during menopause, an excoriating discharge; bleeding following coitus are three cardinal symptoms of malignancy. On examination bleeding to the slightest touch, marked friability of the tissue under slight pressure from the finger and extreme hardness are pathognomonic of cancer of cervix. Introduce the sound into the uterus, if we have a repetition of the previously quoted cardinal signs, cancer of the body is present. To sum up the facts, it means

careful, painstaking, routine history taking; thorough and repeated physical examinations. Finally the public must be educated. How many patients know what a thorough examination means? The false modesty in the female sex is to a great extent due to ignorance and yet much of it can be placed at the door of the medical profession. If we do our part, less needless exploratory laparotomies will be performed; less unsexing of women; fewer cases of pelvic-metastasis treated for sciatica; the Tabetic, Arterio-Sclerotic, Uraemic and patients suffering from Plumbism will not be sent to the operating room with a diagnosis of Ulcer of stomach, Cholelithiasis or high Appendix.

A campaign of education can do wonders; note the work of Clubbe in Australia on Intussusception; Winter and his 20-year campaign in Germany on cancer of uterus. In Europe the operability of carcinoma of uterus has increased to 65.5 per cent while in the U. S. it is 35 per cent.

Surgery has certainly accomplished a superhuman task. Schauta (15) reviewing his 10 years' experience with the comprehensive vaginal operation shows a total operative mortality of 8.9 per cent; during the last 3 years it has only been 3.7 per cent. This percentage of absolute cures has gradually increased from 12.7 to 23.9 per cent. Wertheim's per cent has increased from 8.7 per cent to 20 per cent. Schauta's operability has increased from 43.9 per cent to 64.9 per cent with increase of absolute cures from 34.2 per cent to 48.8 per cent. In stomach operations note the results obtained by Mayo (16). From Oct. 1, 1899, to Oct. 1, 1909, there were 251 gastrectomies for cancer with mortality of 13 per cent. Of these patients 29 per cent operated upon more than 3 years ago, are alive and well. They resected the large intestine 69 times for carcinoma, 60 per cent operated upon more than 3 years ago are alive and well. Rectal cancer, on the other hand, have not as good an outlook. Here the carelessness of the medical profession is to a certain extent at fault. Of a total of 92 (17) cases, 45 were inoperable. A rectal examination is indicated in all obscure conditions. Occasionally one finds sigmoidal cancers obscured by stomach symptoms; indeed the symptoms may be entirely gastric. Looking at it from another point of view, if the case suggests gastric cancer, a rectal examination tells us whether the metastasis has gone so far as to be inoperable.

- (1) R. J. Simons, *British Medical Journal*, June 30, 1909.
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- (3) E. F. Bashford, *Lancet*, Sept. 4, 1909.
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- (5) Wm. J. Mayo, *Mayo Clinical Papers*, 1910, pp. 580-582.
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- (8) Wm. P. MacCarty, *Mayo Clinical Papers*, 1910, p. 150.
- (9) L. B. Wilson, *Mayo Clinical Papers*, 1910, p. 284.
- (10) Jr. A. M. A., Nov. 11, 1911, p. 1601. Wilson & McGrath.
- (12) J. A. McGlinn, *N. Y. Med. Journal*, July 31, 1909.
- (13) R. L. Payne, Jr., *Jr. A. M. A.*, May 6, 1911, p. 1324.
- (14) Winter Abstr., *Jr. A. M. A.*, July 29, 1911, p. 432, No. 85.
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TREATMENT OF TUBERCULOUS DISEASE OF THE HIP.

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Given a patient with the usual symptoms of lamed function, limp, muscular spasm, limitation of motion especially of rotation and abduction, malposition, muscular atrophy, night cries, how best can that patient be treated to conserve the joint and limb, to preserve the health, and to save finally the life? Orthopedic men as a whole and, in fact, all surgeons are of the opinion that rest is the essential element and however they may differ as to the means and methods by which it may be secured, they are agreed as to its value. Whatever else is done, all such measures must be regarded as supplementary and of secondary value.

In the treatment of this disease the pendulum has swung back and forth, and at different times in the progress of surgery men have sought quicker roads to fame and wealth and have seen fit to invade this joint with the knife, the curette, the chisel, and the saw, and with the most disastrous results. And now at the present era the pendulum has swung back to that of conservatism, and our results under this form of treatment are so much superior that there is nothing left to be said in favor of radical measures. The end results and only such should be considered, after these early operative measures are far inferior to those attained under conservative measures. Every day there can be seen on our streets case after case typifying the bad results of early operative surgery; cases which should make a decidedly grim impression upon us. It should neither be a source of gratification or a reason for self-congratulation to discharge a case as cured with a limb anatomically and functionally in noticeable contrast with its fellow. From an esthetic, utilitarian and economic standpoint it is bad to send a person through life with a mature or over-developed limb on one side and with an infantile limb on the other, with a limb not only much smaller in muscular development, but one which is very much shortened; and with a joint unstable and weak, thus subjecting the patient to continual joint strain and discomfort. Surely if in the treatment of these cases we have no better end results to offer to these unfortunate ones than as above described we had better leave the cases entirely to nature, for she will in a large majority of them effect cures and in the end will give the patients better and more serviceable limbs.

It is disappointing to some to acknowledge that operative surgery which has made such rapid strides along other lines should thus so signally fail when it comes to the treatment of the disease under discussion. But time

and experience have clearly demonstrated this fact beyond any semblance of doubt and radical operative measures have no place in this discussion.

It is not hard to understand why an epiphysis contiguous with a tuberculous focus in the acetabulum or soft tissues surrounding it, or in the head itself should still continue to functionate, or even to be stimulated to overgrowth so that the length of the limb may be so conserved as to equal its fellow. But it is difficult to understand that an epiphysis perforated with numerous foci honeycombed as it were, bathed or even weltering in tuberculous debris, and with no evident blood supply; why such an epiphysis should be more valuable to the growth of a limb in situ than in formalin, yet it is a fact that the growth of a limb goes on much better with it in place than when it is in a jar. For future growth and development it is far better to have a so-called rotten epiphysis than to have no epiphysis at all. And for this reason those of you who are impelled at times to invade these joints with the sane or insane idea of eradicating by a curettement, or by an excision of the head, the focus or foci of disease or of removing the detritus whether of bone or of softened tissue would do well to consider the possibility of interfering with the subsequent growth of the limb. Past results have not justified such measures.

Were a purely focal operation possible and by it I mean the entire removal of the disease without any mutilation whatever, then I would certainly advocate it. The merits of such an operation versus a resection are very evident. But the operation is too blind, the field too difficult to ever hope for good results. Leaving out the danger of interfering with the epiphyseal line, how is the focal point to be determined? How is it to be ascertained whether the focus is in the acetabulum or in the epiphysis? The radiogram is of very little aid in early cases in determining its exact presence and location. Very rarely can a focus be noted on a plate and beyond a diffused cloudiness and irregularity or loss of outline it shows no further evidence of disease and coupled with the fact that the disease oftentimes begins in the acetabulum and in the synovial membrane and from these foci extending to contiguous parts is hard to understand what good can be expected as the result of such a bold invasion. One writer tersely states that "one may as well expect to pick up one pea out of a bushel with a steam shovel as to expect to successfully remove a tuberculous focus or foci at the hip joint without a mutilating operation."

Unless the disease can be entirely eradicated without interfering with the epiphyseal line, and this is impossible, it is far better to practice that masterly inactivity and to withhold one's hand, and furthermore it must be seen that such boldness is not devoid of danger, for to pave the way for a secondary infection engrafted upon a tuberculous lesion must be looked upon as a catastrophe that should be avoided at all hazards. And those of us who in the past have operated upon such cases know, to our chagrin, that the invitation held out to the pyogenic organisms does not long remain

unaccepted with the result that in not a few cases in spite of our best efforts to prevent it, we are forced to watch the little ones melt down before the infection like corn before the hot winds of July and August. Abscesses, discharging sinuses, septic fevers, amyloid degenerations, follow frequently in the wake of such operations until their little bodies, caricatures of former selves, finally give up the struggle. And with this danger ever present to go for a focus that may or may not be in the femur, and in a child already winning against the disease or is almost certain to do so if given the proper treatment is bold and forced surgery and should be severely condemned.

From these remarks there ought to be no doubt in your minds as to how I stand with regard to any plan of treatment that holds any operative procedure as its base. But there can be no general rule but which has its exceptions. Once in a while a case is presented, of such a desperate character, in which a timely excision of the head of the femur with a thorough removal of all the diseased tissue may result in saving a limb or even life, and when brought face to face with such a case there should be no hesitation in doing it. Ultraconservatism in such a case is folly. The condition must be met and nothing short of a radical and in itself a mutilating operation is of any avail.

How best then to secure rest to that inflamed joint. The work done by the hip resolves itself into two factors, motion and weight bearing, or friction and pressure, and to secure rest these two forces must be overcome. To combat these forces fixation or immobilization and traction theoretically at least fulfill the requirements. It has always been a debatable question with me as to the real value of traction as distinct from the immobilization which it induces. It is an open question whether traction as ordinarily applied and in the most efficient practical manner if it ever causes a separation of the articular surfaces. There is no doubt as to its efficiency in allaying muscular spasm, but it has been demonstrated to me again and again that equally good and rapid results have been obtained by other methods, for instance with a long plaster spica extending from the nipple-line to the tips of the toes. In a few cases where traction has failed and where immobilization by means of the long spica proved inefficient, the principles of both were combined with very satisfactory results. However, there are a few cases in which relief is not obtained by any method of fixation. Such cases are nearly always complicated by abscesses in which the pus is under tension within the capsule and when evacuated relief is obtained.

The method of securing rest and immobility is of some importance. The mechanical devices must vary with different men. Whatever apparatus that will put the joint at rest, that will relax the muscular spasm, that will bring about a cessation of the night cries, and later that which will relieve all of the above symptoms and at the same time will enable

the patient to be out of doors and to get about; whatever apparatus is able to accomplish this, such apparatus is efficient. My preference is for plaster of paris and in spicas of various lengths to meet individual conditions I find them most efficient. I have never seen a brace, however nicely fitting and elegantly finished, that I would exchange for a nicely applied and well fitting plaster spica. To dwell upon the respective merits of the two would be an unnecessary waste of time. The chief meritorious advantage of the spica over the brace is the fact that it cannot be removed upon the slightest occasion by over-indulgent parents, and this fact alone in its favor is enough to cause me to stamp my approval upon it.

Absolute rest for a prolonged period of time is impracticable and undesirable. To force a child to stay in bed with the hip immobilized by traction, by a spica or by a brace for a prolonged period of time defeats to some extent the end result which we hope to attain in the treatment. Outdoor life and sunshine are both essential to the repair of tuberculous lesions and to deprive a child of them militates against recovery. The aim then is to keep the child in bed only long enough to secure relief from the local condition and fortunately in many cases this does not call for a long confinement; to then get them out of doors, or a cart, walking with or without crutches, with or without an elevated shoe, to encourage them to use the limb and to bear weight upon it providing that such use is free from all pain and discomfort. This is the general plan of procedure and if carried out a great deal will be accomplished toward securing an equal development of both limbs. And as the relief from pain thus secured, is maintained, and as the physical condition of the patient is improved when finally all symptoms are abated and all apparatus discarded we are not confronted with a pitiable looking object, having a twenty year old limb on one side, and an eight year old limb on the other; with a limb greatly shortened, greatly atrophied, possibly dislocated and deformed, but with a fairly healthy looking patient possessing two limbs of good muscular development, and of equal or nearly equal length. Motion at the hip joint may be and usually is partially or entirely lost but the resultant limb is a useful and serviceable one.

What about deformities, and when should they be corrected and how? A very difficult question to answer as cases must be regarded as individual ones. They should not be allowed to occur. In cases coming under treatment where the deformity is due to muscular spasm only, there is no objection under full anaesthesia to correct the position of the limb at once. It can be done with no trauma to the joint and in five minutes there can be accomplished what will require weeks by the slow method of traction. With the malposition entirely corrected the desired position may be maintained by the immediate application of a plaster spica. And this desired position in my opinion is the one in which muscular balance is most perfectly maintained and fortunately this is also the "position of choice,"

should ankylosis occur. A limb in an attitude of slight flexion, of slight abduction, and of slight outward rotation fully meets these requirements. But where the cases are older in duration, where the deformity is accomplished with a structural shortening and contraction of the muscles and where we have every reason to believe that the inflammatory exudate is extensive and organized; when there is actual limitation of motion due to adhesions it has seemed to me that the best plan to be pursued is to leave the deformity alone and to protect the joint as it is and when the disease is cured then to make the necessary correction by tenotomies and osteotomy.

What about abscesses?

It is to be remembered that a tuberculous abscess is formed by the breaking down of the center of a tuberculous mass and that the increase in size is due to the extension of the disease at its periphery. Such an abscess as a rule contains no other organism than the tubercle bacillus and is not associated with systemic symptoms. Its presence is oftentimes obscure and is made known only when it appears at the surface or by mechanically interfering with the function of the joint. The mere presence of such an abscess, providing that it is unaccompanied by elevation of temperature and impairment of general conditions is of no importance as long as it is closed. If for any reason local or constitutional, it needs to be opened it is wiser whenever possible to aspirate for the purpose of removing the excess of fluid. This aspiration will probably have to be repeated several times at intervals depending upon the rapidity of the refilling of the cavity. If for any reason aspiration is not successful then it is advisable to remove the contents through one or several minute punctures. In any cases where the abscess represents a mixed infection, free incision should be made, the pus evacuated and cavity wiped out with tincture of iodine. A small wick may be left in for a day or so and then removed and the wound encouraged to heal. This may have to be repeated several times but it is better to do this than to have a continually discharging sinus because of the lessened danger of having a multiple infection. The injection advocates are numerous and are using injections of iodoform with different bases, of Calot's Fluid, which consists of iodoform, creosote, ether and oil. The exact value of these medicinal agents used in this manner is a debatable question.

What about sinuses?

The mere presence of a sinus or sinuses does not in itself call for active and energetic remedial measures. Those which serve as drains should not be disturbed. And in advanced cases where the disease is quiescent and where the tissues about the joint have a resistant, porky feeling they should be let alone. In many cases sinuses persist as fistulae serving no useful purpose. In such cases an attempt may be made to close them. A

complete removal of the wall by excision or by a thorough curettement is a fairly efficient method. The use of Beck's bismuth paste should in my opinion be restricted to this class of sinuses and in a number of cases I have found it efficient. To use it in all sinuses is but a travesty upon common sense for to attempt to block up a copiously discharging sinus or tract is an unwise procedure.

What about the injection of medicinal agents into the joint?

It has always been difficult for me to understand how one could expect to accomplish any good in the treatment of the disease under discussion by the use of these agents in the manner as advocated. But clinical results should overshadow theoretical objections. In a large series of cases I have seen the plan as advocated faithfully carried out. The results did not justify a continuation of the method. Consequently in the large orthopedic clinics with which I am familiar its use has been abandoned.

As to the use of Tuberculin:

We are forced to acknowledge that its use is of unproved value. Reliable evidence of its beneficial effect is wanting. Its administration in small doses can do no harm, but if used to the point of securing constitutional reaction it is agreed that such use is harmful and injurious.

In briefly recapitulating the treatment of hip joint disease then one must be given a little latitude. The proper treatment is not the exclusive use of any one method but simply the use of such means as may meet the indications as they are present. To fix and to protect the hip joint as long as it is sensitive and as long as there is muscular spasm, to prevent distortions of the limb, but when present to correct them as may seem wise in the individual judgment. Abscesses are to be treated on general surgical principles. Radical operative measures are needed only in exceptional cases. Out of door life, good surroundings, good food tonics, permitting as much activity as the local condition of the joint may justify, improving the general condition by exercise, these are the best antidotes at present available to the tuberculous condition.

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ARTERIOSCLEROSIS.

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It is surprising how the importance and applicability of a subject grows on one who, having formerly taken no particular interest in it, begins to study it a little more intently. Thus we find that the ophthalmologist attributes all sorts of pains and aches and even digestive disorders, to eyestrain. The nose and throat man discovers that all defectives are such because they have adenoids, and the gynecologist will even allege that alopecia is due to strabismus uteri.

So we may find that all the ills of life occurring after the turn of the meridian and due to arteriosclerosis, or perhaps we had better modify the statement a little and say that all chronic ailments are caused or greatly influenced by the condition of the arteries. One has well said, "A man is only as old as his arteries," and we may find a man of 25 whose arteries pronounce him to be 60, or obversely we may find an old man who is really young.

Everyone desires to live long, provided he can retain his mental and physical powers—in other words, if he can grow old gracefully. Those who are able by proper habits and living, to keep their bloodvessels elastic so that they take care of the blood pressure in all its varying degrees, stand a much better chance for a desirable old age than do those whose arteries are brittle and rigid from the loss of their elastic and muscle fibres and the deposit of mineral salts in their coats. Physicians may well take a personal interest in this subject as their strenuous lives and habits have a direct tendency to produce diseased arteries, and mortality tables show that a large per cent of our profession die of diseases in which arteriosclerosis plays a principal part.

Arteriosclerosis is sometimes an inflammatory, sometimes a degenerative process, affecting the coats of the arteries, causing more or less fibrous thickening, inelasticity and distortion or deformity, producing a constriction of the vessel in some cases, and in others tending to weakening and dilation of the walls. In many cases there is an occlusion of the tube either by encroachment on its lumen by the thickened walls, or by thrombosis. Or the weakened vessels may dilate forming aneurysm, or may rupture, as frequently happens in sclerosed arteries in the brain, giving rise to cerebral hemorrhage. In cases of long standing calcareous deposits are formed in the tunica intima and media, together with narrowing of the vessel, thus reducing the blood supply and raising the blood

pressure required to force the blood through into the parts affected. This causes a local anemia, or if the artery becomes entirely occluded gangrene of the part will ensue.

Certain arteries are more prone to this disease than others—the aorta, the coronary arteries, sclerosis of which is supposed to be the cause of angina pectoris, the renal arteries, the cerebral arteries—each of which produces a very different symptom complex.

In order to know how to preserve the normal elasticity of the blood vessels it is necessary to know the causes of this disease. Aside from causes which may be called toxic, such as diseases which produce arteritis, the principal cause seems to be increased blood tension. Among the diseases above referred to are syphilis, gout, typhoid fever, scarlet fever, diphtheria, chronic lead poisoning.

But probably the greater number of cases do not arise from these secondary cases of endarteritis, but from a very gradually developing chronic endarteritis caused by increased blood tension which is habitual or continued for long periods of time. To get back of this and determine what has caused the abnormal blood pressure is also a problem. In the Handbook of Therapy recently issued by the A. M. A. the author presents the subject in the following language: "A question that has been considerably discussed is, 'What is the cause of this increased blood tension?' The condition has been variously ascribed to tension caused by increased activity; to hypertrophy of the left ventricle, which, however, is generally compensatory to overcome the increased arterial tension; to the circulation in the blood of toxins absorbed from the intestines which irritate the vessel walls and the central nervous system; to toxins retained in the blood by insufficient excretion by the kidneys; and to a hypersecretion of the vaso constrictor element of the suprarenals, or to a relatively increased secretion from these glands, at a period of life when the thyroid furnishes a diminished secretion and therefore less vaso-dilator stuff."

In an article on Arterio Sclerosis in Wood's Reference Handbook, written by Bishop, we find the subject of blood pressure dealt with at length. He considers the influence of blood pressure an important feature of this disease. The circulation does not depend so much upon the pressure in the arteries, as it does upon the relative tension in the arteries and in the parts which are needing the blood. This involves a consideration of venous and capillary pressure as well.

Exercise increases blood pressure at first, but later, if continued, the heart rises to the emergency, and by working faster supplies plenty of blood and the pressure falls. Blood is supplied to the organ doing the work—thus in mental work blood is forced into the brain and the pressure increases, digestion calls for increased supply in the stomach, and indigestion may be caused by physical or mental exertion just after eating,

by robbing the stomach of blood needed for that process. A sudden emotion draws a surplus to the brain. Lethargy following overeating is caused by enaemia of the brain, which balances the congestion in the stomach blood vessels. Thus we see that blood tension is constantly varying in different parts of the body, never being the same in all organs, the mean pressure being highest in the aorta and diminishing along the arterial tract towards the capillaries. Reference Handbook Medical Sciences, III, P. 98, et seq., Geo. P. Dreyer: "The circulation in the vessels at any moment represents a state of dynamic equilibrium which is subject to constant variations. The energy of the heart's action may be altered by variations in the rate, volume and force of its strokes. Again, the peripheral resistance may vary in consequence of changes in the calibre of the vessels—constriction on their part over any considerable area will raise, widespread dilation will lower general arterial pressure. Changes in both heart and arteries are constantly taking place, and are, indeed, necessary and essential. A fixed and rigid condition of the circulatory apparatus, devoid of adjustment to the varying needs of the several organs would be worse than useless; it would be positively harmful." And just such a "fixed and rigid condition of the circulatory apparatus" as this author refers to is produced to a greater or less extent by hardening of the arteries, and its harmful results are very evident.

The combined capacity of the blood vessels of the periphery is many times that of the aorta, so the blood is really spread out in an elastic reservoir—the arterial system. Then when some organ calls for more blood, the arterioles supplying it dilate through the vaso motor nervous mechanism, the rest of the arterial system contracts and a congestion of that organ is produced, with a corresponding anaemia of other organs. The heart serves the purpose primarily of maintaining a sufficient pressure in the whole elastic reservoir, but the vaso motor system controls this pressure in the different organs.

Now when the vessels supplying a given organ, for instance the brain, become sclerotic, so that they can no longer expand and contract, we have a condition of chronic congestion or anaemia, according as these diseased arteries are dilated or contracted, and disease of the organ ensues.

These conditions of anaemia and congestion may be merely relative; congestion means a surplus of blood, but the blood may not be circulating to any extent and the part be starved to death because no new blood is supplied. Anaemia means a deficiency of blood in the part, but if what little blood reaches that part is circulating freely and being renewed, the part may not suffer. The pulse itself does not tell of the circulation of a part, nor does it indicate that blood is passing under the finger, as a pulse may be felt in a ligated artery in which no blood is passing.

Increased pressure in the blood vessels, by throwing a greater strain upon their coats, causes irritation and possibly a mild inflammation, and

if continued will result in arterio sclerosis. When the arterial system becomes less elastic and yielding a greater strain is thrown upon the heart, particularly the left ventricle, which hypertrophies, and perhaps later dilates, and we get the usual train of symptoms. These pathological conditions are so interwoven and so gradual in onset that it is impossible to tell when they begin; but any habit of mind or body which keeps one keyed up to the top notch is overworking the cardio-vascular system. Over-indulgence at table, bed or bar and excessive use of tobacco are among the common causes, and in fact everything that enters into the strenuous life. The vigorous folk who do things at high pressure are candidates for this class of ailments in their later years. The senile heart lacks the reserve force of youth and fails to respond to the demands of a circulation through obstructed arteries, and this leads to a variety of symptoms. Vaso motor disturbance causing unusual dilatation of the bloodvessels is accompanied by sensations of heat, by sweating and sometimes redness of the skin. Sometimes, owing to vaso motor spasmodic action, part of the body may be hot and part cold. Head sounds or noises and roaring in the ears are often due to circulatory disturbances, the bloodvessels in the inner ear perhaps having a deficient supply of blood. Slight paralytic symptoms, such as partial loss of power of strength in an arm or leg, or slight loss of the power of speech are among the signs of arteriosclerosis. Neuritic pains and even sciatica, frequent nose bleed, congestion of the liver with gastric disturbances, are somewhat common. Acute mania, impairment of memory and judgment, change in disposition, general convulsions resembling epilepsy are more serious manifestations of the disease.

Butler says the signs of left side hypertrophy and later of cardiac dilation are common to all cases. "The apex beat is shifted to the left, the impulse is forcible and heaving and the aortic closure is loud, ringing and accentuated."

Osler says: "The combination of increased arterial tension, a palpable thickening of the arteries, hypertrophy of the left ventricle, and accentuation of the aortic second sound are signs pathognomonic of arteriosclerosis." However, with all these a patient may remain in good health for years as long as the heart is able to compensate for the increased labor of the circulation. The further symptoms depend much upon the territory in which the sclerosis is most pronounced—being generally referable to kidneys, brain or heart. Involvement of the coronary arteries may lead to thrombosis with sudden death, angina pectoris, or fibroid degeneration of the heart muscle. When hypertrophy begins to give way to dilatation we find dyspnoea, scant urine, dropsy; cerebral arteriosclerosis may result in cerebral hemorrhage, but may also give rise to less dangerous symptoms, such as vertigo, headache, loss of memory, insomnia, epileptiform attacks, neurasthenia, aphasia, hemiplegia.

Nephritis is very common and one author thinks we should speak of cardio-vascular-renal disease instead of Bright's disease. Premonitory

symptoms of cardio-vascular-renal disease are at first slight and may not arouse the fears of the patient enough to send him to a physician. Slightly increased tendency to headache, muscle pains, vertigo, occasional shortness of breath after exertion, frequent urination, digestive disorders, coated tongue, bad taste in the mouth, diarrhoea, palpitation of the heart, slight puffiness under the eyes or in the ankles, pallor, general debility, may persist in mild degree for some time before the patient thinks it necessary to secure medical advice. The physician may find traces of albumen in the urine. If the arteriosclerosis is of long standing the arcus senilis may be observed though this is not a constant sign. The arteries that can be examined may feel hard and roll under the finger like a whipcord, but this also is not constant as the accessible arteries may not be the ones that are affected. Vision may be somewhat dimmed, diplopia, amaurosis or hemianopsia may be more or less pronounced. When certain peripheral arteries become obstructed from sclerosis gangrene of the part may ensue from starvation of the tissues. It is well to remember that arteriosclerosis renders the administration of an anesthetic more dangerous.

This is one of the diseases whose treatment must begin before the disease begins. In other words prevention is the great desideratum, and after the arteries become really hardened and deformed, treatment avails little, although one investigator, Rumpf, has advanced a theory that by lessening lime-containing foods and giving lactic acid to dissolve the lime already deposited, the disease might be cured. Prophylaxis has been indicated in the discussion of the etiology, and may perhaps be summed up in one word, MODERATION.

As to the treatment of the symptoms arising from general arteriosclerosis, diet has an important bearing on the case. The diet should probably approach the vegetarian, very little meat being allowed, but plenty of milk should be taken. Thompson suggests the restriction of liquids, as too much fluid taken into the stomach is readily absorbed into the circulation and raises the blood tension, thus throwing more work upon the heart, and more strain upon the weakened vessels.

If the patient can live in a mild, equable climate, which has no extremes of heat and cold and sudden changes, such as Southern California, his chances will be much better. Also his life and general habits must agree with the climate by following lines of moderation, with as little of the strenuous as possible, free from worry and hard work, and free from mental or physical strain. But although rest is the keynote, a judicious amount of exercise is required to keep the organs and tissues in proper tone. Walking and mild exercise taken in the open air without carrying to the point of fatigue are beneficial.

Medical treatment as indicated by a variety of authors is equally variegated. Perhaps the constitutional remedy which is almost universally rec-

ommended is Iodide of Potassium, the dose of which varies from 15 to 150 grains daily, over long periods of time. The theories of the action of this remedy vary, some attributing to it the power of dissolving the deposits in the walls of the arteries and restoring them to a normal elasticity, while others deny any such action and maintain that a lowering of the blood tension is its only effect. As all agree that it benefits the patient, the manner in which it does so is of minor importance. The administration of the nitrites is also generally advised although some authors as Pick and Hecht say: "The action of the nitrites of amyl and sodium and nitro-glycerine in lowering blood pressure are so transient that they are of little use in such a chronic disease, except for emergencies."

When the arteries of the brain, or of the kidneys or some other organ are the seat of the disease the treatment becomes largely that of the particular train of symptoms developed, although the general regimen outlined above is generally applicable. Modern textbooks go into details of treatment elaborately and the physician who has a case of arteriosclerosis on hand will have plenty of time to study and try various remedies, sometimes with happy results, but often with very little benefit to the chronic sufferer.

DISCUSSION.

Dr. G. Wilse Robinson, Kansas City, Missouri:

I think this most excellent paper is well worthy of our discussion and serious consideration. I do not think we all appreciate the influence of arteriosclerosis upon the brain and cord. I have been much interested in studying the influence of arteriosclerosis on nervous diseases. Of course we always find some hardening of the arteries, but it is not necessary that we have syphilitic infection to have this hardening.

Practically all of those cases coming under my observation suffering from diseases of, or disturbed function of, the central nervous system, have hardening of the arteries. It comes from auto-intoxication or is traceable to syphilis or some infectious disease. I find this condition more prevalent in the depressing psychoses than in the anxious psychoses. I find it very prevalent in alcoholics—those who have been habitual users of alcohol or of tobacco. I heard a man say this morning that he did not think three cigars a day would cause arteriosclerosis. It might not in you, but in some it would. A very small use of tobacco, say one cigar a day, would cause it in some people.

Of course we know that the nutrition of the brain is interfered with when one has arteriosclerosis. You find in young girls, not over 15 or 16 years of age, a palpable radial artery; they are poisoned by glandular intoxication—that interferes with nutrition. Then we get the same poison that interferes with nerve cells.

I think it well for every man to study every case that comes under observation as to the condition of the arteries. It is of the greatest importance in treatment and prognosis.

Dr. M. L. Perry, Parsons, Kansas:

The matter of prophylaxis is to my mind an important one. There is no doubt of the tendency of members of the same family to develop arterial diseases, and those who have a family history of cerebral hemorrhage should be especially warned.

I am sure that the doctor's suggestion of moderation is a very timely one. From my own personal experience I am inclined to lay stress upon worry as a factor in arterial disease. This trouble is often found at an earlier stage than we have been used to believe. I think this especially true of nervous types. I have been much impressed with this fact in doing autopsies on young persons of nervous types.

Dr. L. J. Moorman, Oklahoma City:

I appreciate the doctor's paper and the consideration he has given this subject. It is my opinion that a great many cases of arteriosclerosis are caused by over-exertion, by heavy labor. I have recently had a case which seemed to illustrate this point: A man 49 years of age; of clean habits; no history of syphilis; no alcoholism; no stomach trouble. He had worked in the lead and zinc mines during early life and also participated in athletic sports. When I saw him he had blood pressure 220 to 240; interstitial nephritis and involvement of the retina. He presented the characteristic picture of advanced arteriosclerosis with symptoms of senile dementia.

I think this tends to illustrate that over-exertion is a causative factor in the production of arterio-sclerosis.

Dr S. Grover Burnett, Kansas City, Missouri:

We are old proportionately as are our arteries. Some people have these arterial changes because of their tissue inheritance. They are born with a tissue constitutionally predisposed to hyper-tension and hyper-responses to the ordinary stresses of life. Some early, and some later, run a high compensating blood pressure which, in time, means arteriosclerosis.

One of a family, age 29 years; blood pressure 170 m. m., became suddenly hemiplegic. Had no infection; his brother, 27 years, now has a blood pressure of 150 m. m. Their father died at 51 years, hemiplegic; six months after I had detected an irreducible high blood pressure with a

deforming arteriosclerosis. The father's brother had high blood pressure and a hemiplegia at 29 years of age. All four were physicians.

The early detection and reduction of high blood pressure by modern methods, and a maintained reduction by correcting gastric and mal-assimilative violations by teaching and enforcing dietetic vigilance, and, above all, by teaching the patient to expunge the STRESS OF THE TISSUES, LIVING WITH THE BRAIN AND SOMATIC TISSUES RESTED, will preclude arteriosclerosis later and its athological sequelae.

The modern reduction agent today is the D'Arsonval current. This high frequency, high potential, applying the auto-condensation modality, will reduce a high blood pressure from five to twenty m. m. in twelve to fifteen minutes. The reduction is obtained and may be retained without change in systolic or arterial compensation. We owe much to W. B. Snow for this modern therapeutic measure. My past four years experience with the D'Arsonval Current in pressure reduction in neurological work, will be reported shortly.

Dr. Glasscock, Kansas City, Kansas:

I have observed that all depressed forms of insanity, where there is no particular worry, the blood pressure is fifteen or twenty per cent below normal; and in the excited kind it is from fifteen to twenty per cent above normal.

While it is true that arteriosclerosis does occur in the young, yet it is distinctively a disease of advanced life. I think we make a mistake if we think it occurs often in the young for it is truly a disease of advanced life.

Dr. Boardman, closing:

I have enjoyed the discussion more than the paper, myself. A great many good points have been brought out. That of family heredity is a good one; and it is doubtless true that this trouble may be caused by over exertion, also. I think over exertion does tend to diseases of the arteries.

One of the most promising things, I think, is that after a man has passed the meridian of life and is informed that his arteries are hardening, if he will live a more moderate life, take care not to over eat, over exert himself, etc., there is hope of his living many years.

EDITORIAL

THE LOST ART OF OBSTETRICS.

Observation of methods in vogue in the hands of different men at the present time almost justify the above expression; obstetrics, in minds of many professional men is a part of the work to be done simply because it leads to something better eventually and many of them look forward to the day when they can turn that part of the work over to some other man.

As a matter of fact, the woes following and incident to improperly handled obstetrical cases are legion and are of such a character as to often render the mother an invalid. The prompt discovery of lacerations should be a matter of routine, yet they are often overlooked for years or until accidentally discovered by some other physician than the original attendant, reflecting of course on the first physician and doing him an injury in the mind of the patient.

There is no certain way to estimate the percentage, but the writer believes that probably fifty per cent of lying in women in Oklahoma go to a conclusion without a proper urinary examination being made in the regular and methodical manner it should have. This is all wrong and a very limited experience will show a man that it is so without considering the teachings of modern obstetrics at all.

Every case of confinement should be reported to the physician at an early date and systematic examinations should be made looking to the detection of possible future trouble and the protection of the mother.

The habit that physicians have of taking things as a matter of course, reasoning that practically all women go through their ordeal without abnormalities and that therefore this case will do so is neither just to the mother or to be commended in the physician. A physician should regard each case as being the one possible case of disaster in his work and do his duty by closely observing his patient until he has been discharged from the case.

It should be remembered that a very small amount of albumen may be the signpost of danger and eclampsia; albumen, swollen feet, face and eyelids and headaches are rather common in pregnancy and not necessarily harmful, but their existence should be known to the physician and their pathognomonic indications considered. It is true that the number in com-

parison to the total of cases, resulting badly from the above causes is very small, yet it should be the aim of the physician to render his bad results even smaller than they are and energetic work along the proper lines in the face of the above conditions is rewarded by success in a surprising degree.

The sin of the lack of asepsis and antisepsis in the obstetrical chamber is to be more harshly condemned than all the others. Here we have an otherwise healthy mother who is confined to the bed for weeks, her life imperiled and sometimes lost by the negligence of the attendant in the use of the simplest measures and display of common sense.

An obstetrical case is a surgical case and as such deserves the same degree of cleanliness and asepsis as does surgical work. Dirty obstetrics does not necessarily result badly neither does dirty surgery always give a bad result but the man who is dirty in his obstetrical work will soon become marked in his community as an incompetent by the intelligent people.

Sermons could be written on the subject of obstetrical uncleanness and obituaries are written as the final chapter of it too often to be complimentary to the medical profession.

REFORMING THE IRREGULAR BY SOCIETY MEMBERSHIP.

There has long been a tendency in some medical societies to encourage the admission of members of the medical profession who by their acts or lack of action along proper lines are just without the pale of propriety and respectability as professional men.

This matter is indeed a problem in certain localities, and is more or less one in every society. There are men in the organization who reason that though a man is given to improper acts, we have no hold on him professionally or morally as long as he is not a member, but when he becomes one of us we have the right to censor his acts and discipline him when occasion arises. This reasoning is right from that standpoint only and the other side of the question weighs heavily as a society drawback.

The better men are often disgusted by the low ideals of the purely commercial physician; those who are members solely for the purpose of trading their membership for what they can get out of it, those who see in every move of the progressive member some ulterior motive, those who are ever ready to find fault with the propaganda advanced by good men and criticise them, yet never advance anything on their own accord. This is enough to make the better man really wonder if it is all worth while.

It seems that to accomplish much more than has been accomplished by medical organization that the true worth of membership should be real-

ized. Membership should carry with it the idea, and be in fact the highest attainment of the reputable physician; it should be of such a high class that when a man was once identified as a member he should be known to all concerned as a man worth while. To do this necessitates the elevation of the present lax standards of admission, the culling of the goats from the sheep. The keynote of the situation lies in the demand that the applicant be endowed with respectability and honesty, without which we can accomplish very little.

MEETING OF HEALTH OFFICERS OF OKLAHOMA.

This meeting, held in Oklahoma City from February 19 to 24, was fraught with much interest to all who attended.

Among the features of the meeting was an address by the Governor, Lee Cruce, in which he unhesitatingly went on record for more decent appropriations for the suppression of disease in the state; a paper by Honorable J. B. A. Robertson which cleared up to the satisfaction of the County Superintendents, many of the problems vexatious to them.

Interesting clinics were held both in Oklahoma City and in Norman. The recent epidemic of meningitis, of course, provoked a great deal of interest and the authoritative statements of Drs. Gayfree, Ellison and A. D. Young, who have made a great deal of investigation and materially assisted in the different localities where the disease was present was of distinct value to all who heard them.

Dr. J. C. Mahr asked for an opinion from those present on the advisability of the non-quarantine of cases of small-pox, which elicited considerable discussion and it seemed the concensus of opinion that the step would be a proper one. It was thought that this move would obviate much of the dissatisfaction due to attempts at compulsory vaccination and make vaccination more popular with certain classes who would have an object lesson before them on the immunity of the vaccinated.

ABSTRACTS

CEREBROSPINAL MENINGITIS.

The recent discovery of the fact that the natural habitat of the organism of cerebrospinal meningitis is in the nose and throat is considered by H. T. King, New Orleans (Journal A. M. A., February 10), to be the most important contribution to our knowledge of the prophylaxis of the disease. With this fact also should be considered the discovery that the disease is carried from individual to individual, often by healthy carriers. The theory of direct extension from the nose and throat to the brain is untenable. The blood-route must be the one followed. In many cases the organism has been found in the blood and it seems to have a special affinity for the meningeal tissues. There must be, however, some lowering of tissue resistance or increase of virulence of the organism, and the cause of this may, in some cases, be a trauma. The disease is undoubtedly transmitted directly from individual to individual and the number of persons carrying the infection is much greater during an epidemic than the number of patients. King estimates that nearly one-fourth of all individuals of the infected locality may be carriers of the disease without apparently showing any serious symptoms. Only occasionally do they present signs of a nasal pharyngitis or slight meningococcal infection. There are some persons who probably carry the germs permanently and perpetuate the disease. Up to the present there has been no absolutely efficacious means of causing the disappearance of the germs in the carriers, but the rigid observance of certain precautions would limit the extent and severity of epidemics. The first essentials for this are: 1. The earnest co-operation between the people and the health authorities in enforcement of all necessary health regulations. 2. The detection and isolation of healthy germ carriers. 3. Efforts toward rendering them harmless. Thorough sanitary inspection is necessary and attention to soil pollution, especially in rural districts. Particular efforts should be made to destroy all germ-carrying parasites and vermin. Circulars of information should be distributed, school inspection should be thorough and popular lectures will also be useful. A carrier once recognized should be put under the care and observation of the health authorities and treatment directed toward disinfection of the nose and throat. All carriers should be inoculated with the antimeningococcal serum. The results should be constantly tested bacteriologically and oral and nasal hygiene be made a routine, not only with them, but with others. Fomites, such as vessels, spoons, handkerchiefs, etc., which have become infected should be thoroughly sterilized or destroyed and special directions as to spitting, sneezing and coughing be given to all carriers of germs. By these means we may hope to minimize the effects of the disease when it occurs.

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THE TREATMENT OF MINOR SURGICAL INJURIES AND DISEASES.

Dr. Chas. Blickensderfer, Shawnee, Okla.

The importance of properly treating the various minor injuries and local infections has never been fully appreciated by the average practitioner and practically not at all by the layman.

The lack of due care and proper treatment has been a fertile source, in many instances, for loss of life and limb, besides the personal suffering and financial losses incident to deformity and impaired function of the extremities.

The carelessness of the layman and his reliance upon the efficacy of practices so commonly found among the people is no doubt largely responsible for the fact that the ordinary physician is neither prepared in skill nor means at hand for their care.

The injuries and diseases below enumerated, constitute a very large part of the practice that daily comes to the office of the physician.

In view of these facts and that this class of injuries is in such preponderance when compared to those necessitating the larger operative procedures and considering that they affect the most productive part of the national population, a discussion of the most simple and at the same time

effective treatment of these conditions, appears of paramount importance.

A classification of the most common injuries and diseases follows:

Contusions, abrasions, crushes, sprains, fractures of bones in hands or feet; burns, lacerated, punctured, incised and wounds of skin and other tissues. Surgical diseases, such as abscess, felons, ulcers (varicose and others), carbuncles, boils, furuncles, palmar abscess, and infected wounds.

There are two principles, which intelligently applied, comprise almost the entire treatment of these conditions. They are "Rest and Position." By rest, we are to understand both body rest and rest of the extremity, as a whole, but more important than all, is tissue rest. Tissue **unrest**, as Bernays would have it, is due, first, to infection by the various organisms, and second, by the separation and malposition of bony and other tissues which mechanically prevent union and healing, resulting in deformity and loss of function, when not corrected. Tissue rest, then, can only be obtained by the prevention or removal of infection from wounds, however small or extensive, and thorough reposition of parts malposed, as a result of fracture or other solution of continuity. Tissue rest may be obtained by asepsis, disinfection of wounds, liberation of pus, removal of necrotic tissue and the use of splints and other suitable dressings.

Position is an important adjunct to the above, as rest of the body as a whole prevents an expenditure of force and vitality that can otherwise be employed for repair of tissue.

An infected extremity should be made to assume such position as will favor disengorgement, thus allowing free circulation of arterial blood to the part. As an example, an infected hand or finger will be more comfortable and also heal better when suspended in such a manner that gravitation assists the return flow of blood to the body, than it will in a pendent position which allows engorgement mechanically interfering with circulation in the part, promoting destructive processes, and, to this extent, interfering with repair.

To secure uniformity of results, one must of necessity so systematize his technique that no detail in the preparation of patient or physician will be overlooked; a system or routine continuously followed, shortly becomes a habit and as such, easily followed. Adherence to some recognized system of technique secures for the patient the least chance for infection or the best opportunity for recovery should infection have already occurred.

Every practitioner should include in his armamentarium, the following articles: Green soap, sapo Mollis, U. S. P., a half dozen hand and nail brushes, not too stiff, a large stock bottle of saturated solution boric acid, ethyl alcohol 95%, wood alcohol, bichloride tablets or germicidal discs of mercuric iodide, P. D. & Co., ether, tincture iodine, carbolic acid, glycerine, absorbent cotton, gauze, bandages, zinc oxide, adhesive tape, plaster of paris, loose and in bandages, a few pieces of light wood, out of which suitable splints may be fashioned for different localities, four or five pairs of steel insoles, rights and lefts, assorted sizes and an inner tube of a bicycle tire. The bicycle tube is the best Esmarch I have ever used and is equally ef-

fective as an elastic bandage where bloodless work of the extremities is to be done. It is both cheap and durable, costing \$1.25, and serviceable for five or six years. Lastly, a sterilizer which may be commodious, portable and cheap, sterilizing as effectively as the best.

The most of us do not know the value of soap, water and brushes. These are the most useful of all agents in preparing the surgeon's hands, the various operative fields and the cleansing of wounds and adjacent territories, especially so in the preparation of the fields surrounding infected areas.

Contusions, abrasions, lacerations, incised and punctured wounds, are with the exception of a few minor details, treated very much alike. They are oftentimes co-existent. A contusion may be extensive, but the most of them are small, the result of minor degrees of violence. The large ones may need drainage for purposes of removing clots of effused blood. The mechanical removal of clots and large amounts of serous effusion assists in the restoration of the vaso-motor function, a very necessary aid to resolution.

At the very outset, these injuries should be regarded as having infectious agents in or about them. The surgeon must first scrub his hands thoroughly with soap and water, using a scrub-brush; his finger nails should be cut short and kept clean. In scrubbing the fingers and nails of both patient and surgeon, particular attention should be paid to scrubbing in **between** the fingers, and **under, along** and **around** the attachment of the nails.

In scrubbing the toes and feet of the patient, this rule should be scrupulously followed.

The entire face of the wound, if infected, must be gently scrubbed with a soft brush and plenty of soap and water, including a large area surrounding it. If the parts are hairy, they may be shaved as hairs are always loaded with bacteria and act as foreign bodies when displaced into the wound. Recent wounds should be subjected to the iodine treatment, in which case scrubbing or washing is not to be employed.

After the soap and water washing, the part may now be scrubbed with 95% alcohol and 1-3000 sol. of bichloride or 1-5000 sol. iodide of mercury. Or mop the wound with tr. iodine and paint the skin for several inches adjacent to it, lightly with the same, applying a sterile dressing.

Lacerations involving the structures below the skin, should now be rinsed with saturated solution boric acid or sterile salt solution and a sterile dressing applied. Lacerations and incised wounds may be closed with or without drainage or left open to granulate as the judgment of the physician may direct, the chief consideration being to deal with the infection at the point of injury. A moderate amount of bloody oozing is not ordinarily objectionable, since fresh blood is the best of germicides, but means must be at hand for its absorption and removal after having performed this very important function. It may be assumed that after the most elaborate process of wound cleansing, there are always left in and about the

wound greater or less numbers of pathogenic bacteria. Methods must therefore be employed to prevent reinfection from this source, which, at the same time, remove to a greater or less degree, the blood and serum that accumulates at the bottom of the dressing, without being compelled to remove the dressing.

Formerly, it was my custom to keep the dressing moist with 1-5000 solution bichloride or with indefinite and varied solutions of boric acid. But, since reading E. H. Oschner's paper, entitled, "The Prevention and Treatment of Septic Infection of the Extremities" (January, 1911), I have adopted his suggestion in reference to saturated solutions of boric acid with 1-6 95% alcohol added. The results have been so satisfactory that I cannot extol it too highly.

The thickness and extent of the dressing should vary with the depth and extent of the wound. A few layers of gauze for a compress covered with a roller bandage in minor contusions and abrasions, is sufficient, but deeper and more extensive wounds should have comparatively thick dressings: 1st, next the wound, a rather fine meshed gauze covered in turn with other layers of gauze which, if it please the surgeon, may be of coarser texture—over this a layer of cotton covered with another layer of gauze and the whole secured by a neat gauze bandage, which may be tied, pinned or fastened with adhesive tape. This should now be thoroughly moistened and kept moist with a solution of alcohol, one part or more as the exigencies of the case may demand, in a saturated solution of boric acid, five or less parts. The reasons for this dressing and solution are as follows:

The fine meshed gauze at the bottom of the dressing prevents to a large extent, the entanglement of reparative granulations, which may be broken down at subsequent dressings, causing pain and discomfort and interfering with repair. The fine meshed gauze, however, does not interfere with the capillarity of the dressing.

The heavier dressing holds its moisture longer and protects and supports the parts, doing away to some extent, with the necessity of frequent change of dressing—a very important consideration. The frequent changing of dressing in the most of these injuries is an evidence of improper and unclean treatment. It also prolongs the period of recovery because of the destruction of granulation tissue and offers opportunity for further infection besides causing unnecessary pain and discomfort to the patient, to him a very important item.

As has been stated by Oschner, saturated solution of boric acid is not a germicide and "does not prevent the growth of pathogenic bacteria, but undoubtedly has great power in reducing their virulence." Alcohol is a powerful dehydrant, with germicidal properties. This solution when used as suggested, gives a sense of warmth and comfort to the patient, preventing the "clammy coldness" so commonly found where wet dressings are employed. A dressing of this kind is active in its capillarity, the volatility of the alcohol contributing largely to this feature. On account of this, there is

a continuous flow from within the tissues to the external surface of the dressings, the alcohol acting as a dehydrant to the tissues, stimulates the blood flow to the wound surfaces, thus supplying the injured tissues with a constant supply of fresh arterial blood, the principal factor in repair, and the current from this point picks up and removes toward the surface of the dressing the used soluble products and the soluble remains of destroyed tissue, both the alcohol and boric acid serving to make them unfertile fields for the propagation of bacteria. It has often been my experience to find these dressings with a superficial appearance of profuse oozing or unwarranted hemorrhage, to find the inner and lower parts of the dressing comparatively free from the gross appearances of blood.

Dressings kept moist with this or other solutions are more easily removed because they are less likely to stick to the wound and the several layers of the dressing are for the same reason separated from each other with greater ease by the surgeon, inflicting a minimum amount of pain upon the patient.

These dressings will retain their moisture much longer by covering them in with gutta percha-tissue or oiled silk, but the objection to this is that the covering while retaining the moisture, prevents the circulation in the dressings from the point of infection or the bottom of the wound, outward, toward the surface of the dressing, thus inhibiting drainage. Contusions, lacerations, abrasions, and crushes of the feet, hands, fingers and toes are often complicated by fractures of some of the bones, many of which are compound. As these injuries are in a large part received by individuals who are laborers, they are therefore, peculiarly liable to infection, so that the problem of adequately dealing with this feature constitutes the chief end and aim of the attending surgeon. We all fully appreciate the disastrous results that so frequently follow the slightest abrasion of the skin when not properly treated. Lacerations, contused or otherwise, with or without accompanying fracture, when not too extensive, may be immersed or gently bathed in a 2% solution of carbolic acid and sterile water; otherwise, a general anesthetic will be necessary. In making this solution, sufficient glycerine should be mixed with the carbolic acid to render it fully soluble in the water. This solution is mildly antiseptic, but more important, it is anesthetic and thus permits the parts to be thoroughly scrubbed with soap and water, alcohol and ether, preparatory to the final dressing, with comparative comfort to the patient. All loose spiculae of detached bone may now be removed, together with any other foreign bodies that may be present. Attached fragments of bone should be reposed as nearly in their normal position as possible. Bone fragments that project to such an extent that they cannot be so replaced, may be trimmed with the bone forceps, taking care to retain the periosteal membrane as nearly intact as possible. The wound may now be mopped with tincture of iodine, and a wide area of skin surrounding the wound should be well painted also. Or, it may be irrigated with a solution of tincture of iodine, 4 teaspoonfuls to the quart of sterile water or normal salt solution after which

the adjoining skin area should be painted with the pure tincture. The irrigation with iodine solution is often a very valuable procedure in making subsequent dressings and particularly if there has been tuberculous infection. The wound properly cleansed, if fractures are a complication, should receive a copious dressing of sterile gauze and cotton, or the dressing in an emergency may be wrung out of a 1-3000 or 1-5000 solution of Bichloride and a suitable splint applied. The splints in such cases should be so applied that they are apposed to the side of the extremity having the least injury and in such a manner as to perfectly immobilize the part. The splint so applied does not interfere with drainage and the subsequent applications of boric acid and alcohol solution. In this position, also, being as far removed as possible from the immediate field of the injury, its presence occasions less pain and discomfort than if placed directly over the wound.

It sometimes happens that in injuries of hands, fingers, feet and toes, that fractures, though present, may not be detected by the ordinary means of examination; and even though they do not exist, the application of a splint serves well many purposes, in that it promotes rest and security to the part and protects the surgeon in an action for malpractice should it later develop that fracture was indeed present. In all cases of doubt, then, however remote the possibility, use a splint.

In injuries of the feet, we use for splints steel insoles, such as are commonly employed in the treatment of "flat foot." They are first padded with sheet wadding so as to make them conform to the natural contour of the foot and applied with the other part of the dressing. Being of metal, they can be easily and quickly sterilized by boiling when necessary. Most injuries of the feet and toes, are dorsal, which makes the plantar splint very acceptable.

There are two other points to be considered in the treatment of these injuries.

The first has reference to the amount of pain caused by making primary and subsequent dressings; the second, making them neat, comfortable and durable.

Too many of us are inclined to minimize the amount of pain incident to wound treatment. We must remember that it is one of our chief functions to relieve and prevent pain. Pain in a wound after treatment is usually an indication of infection or improper treatment or both, particularly so, if it is severe. Pain, beyond a minor degree, caused by dressing is very often due to gross carelessness resulting from ignorance of the ordinary surgical refinements. Pain contributes to or may alone, be the sole cause of shock. And many individuals, the recipients of injury, both from past personal experience and the prevailing opinion of many of the laity relative to surgical cruelty and pain, are deterred from placing themselves in the hands of men who are in every other particular perfectly competent to successfully treat them. A painstaking surgeon in this respect is of great value to his patrons and to corporations employing him.

Neat, snug, well fitting and comfortable dressings are significant tributes to the competency of the surgeon. To the patient and physician alike, they are the most satisfying because they accomplish more good than if otherwise applied. To the casual observer, they carry the conviction of care and capability on the part of the workman.

A slovenly applied dressing or bandage, especially when made without due regard to the service that may result from its proper employment, at once becomes an efficient advertisement of careless incompetence and negligence.

Such dressings are usually inefficient because of unequal pressure; and as a result of their insecure and unstable character may come down, or by opening up in various places, prepare avenues for the entrance of infectious agents from the exterior.

Bandages on exposed parts should by all means be neat, clean, evenly and symmetrically applied and in such a manner that insures their position until time for their proper removal. This precaution eliminates the necessity for a change of dressing except for legitimate cause.

The exterior of many such dressings becomes so soiled and unsightly that for the sake of appearance alone, a change may be demanded before the dressing proper should be disturbed. Here the outer layers of bandage may be removed and be replaced by sufficient turns for the sake of cleanliness.

After having completed the dressing, we usually moisten it thoroughly with 95% ethyl alcohol 1 part, and a saturated solution of boric acid five parts, giving the patient a prescription for from six to sixteen ounces of this solution which may vary in the relative proportion of its constituent parts at the surgeon's discretion. This he is directed to pour on the dressing in only such amount and at such intervals of time as will keep the dressing moist without allowing it to get soppy.

The patient is also instructed as to functioning of bowels and kidneys. In the event of paroxysms of pain originating in or about the wound, he is instructed to pour on such quantity of solution as will enable him to feel it soaking into the wound. As a rule, this at once relieves the pain, but if not, he is then to return to the surgeon who can inspect the wound if necessary. Except in unusual cases, we do not remove our dressings sooner than from four to six or ten days; almost all minor injuries being found in a state of good repair by this time.

As an example, may be mentioned the case of a young man, a machinist's apprentice, who suffered an injury to his left great toe by letting a connecting rod fall or roll over on it. The toe was cut almost off from above downward through the base of the last phalanx. The foot and toes were filthy, the source of a foul odor. The distal portion hung loosely downward, being connected to the proximal portion by the thick plantar skin and a small portion of other soft tissue which fortunately was sufficiently vascular for future reparative purposes. The distal end of the proximal portion of bone was splintered and projected upward out of the

wound and could not be reposed. This was cut away and removed with other detached fragments. The toes were immersed in 2% phenol glycerine and sterile water solution for about five minutes, when they were removed and the entire foot to above the ankle thoroughly scrubbed with soap and sterile water the wound being gently washed and scrubbed likewise. The entire foot including the toes was scrubbed with 1-3000 bichloride solution and mopped with alcohol, after which the skin adjacent to the wound was painted with tincture iodine; the wound itself being mopped out with a dilute solution of the same. No sutures were taken. A sterile dressing was now made to cover the entire foot as far up as the ankle, the toe first being wrapped with a few turns of a gauze strip. A small splint was adjusted as a part of the dressing and the whole carefully bandaged to above the ankle and made secure by a few turns of a one-half inch strip zinc oxide adhesive plaster, after which the dressing was moistened with the alcohol and boric acid solution in the usual manner.

As a matter of precaution, the wound was examined on the evening of the fourth day following the injury, exhibiting no evidences of infection. On the tenth day from date of injury, the wound was practically healed, the line of union being as closely approximated as if it had been sutured. He was discharged on the fourteenth day ready for work. He suffered practically no pain and did not lose a single night's sleep on account of pain, from the date of injury until the day of his discharge.

The therapeutic advantages of drainage in surgical practice are amply exemplified in the results following the above methods of treatment. With no intention to minimize the value of the boric acid solution and alcohol, respecting their germicidal and anodyne properties and their inhibitory action regarding bacterial propagation, it is my firm belief that the very efficient drainage which is so secured, contributes largely to the recovery of these cases. The subject of drainage at once suggests a mental picture of various devices, tubes of glass or rubber, gauze wicks, cigarette drains and gauze packs, that have been and still are extensively used for drainage. These have many times been employed to excellent purpose notwithstanding the fact that they are simply avenues for the escape of accumulations from within a very circumscribed area, which escape is accomplished without the aid of the operation of physical and physiological functions or laws, and without which drainage cannot be but imperfect.

The gauze pack or dressing which we have advised for the minor injuries under discussion, when moistened and kept so by the use of boric acid and alcohol solution, permits of drainage being complete and continuous for as long as the wound remains open. The dehydrant effect of this solution stimulates a continuous flow of blood to the wound surface from the interior, allowing the blood to perform its important reconstructive and germicidal functions,³ also supplying a vehicle in the form of serous transudation that is utilized mechanically for the transportation of detritus from the wound to the exterior of the dressing.

We have here all the necessary requisites for perfect drainage; con-

tinuous capillarity-volatility of the fluid drain content and an esmotic transudation from beyond the depths of the wound, continuing to the dressing surface.

Whoever can be so fortunate as to contrive means to secure as effective drainage based upon similar principles to be used in major operations, when required, and with as few objectionable features as in the above condition, will indeed confer a boon upon the profession. For, a method of drainage so elaborated that it will actually drain and in itself produce no evil results, will at once be entitled to the position of a therapeutic agent of the first order.

Burns, in view of their distressing symptoms, resulting unsightly deformity, and danger to life when extensive, should receive especial consideration. Their treatment should look to the relief of pain, shock and pathologic physiological functions. Those of the first degree do not usually excite any very noted abnormal conditions, while those of the second or third degrees, especially when more or less extensive, bring about changes that profoundly affect the organism and endanger life.

The treatment, to be intelligent, must therefore rest upon a thorough understanding of the pathology and abnormal functions that are present. Briefly, these are as follows:

In those of the second degree, especially when extensive on account of dehydration of the blood causing blebs, blisters, and serous oozing from abraded surfaces, the blood is rendered more dense; as a natural result based both upon physical and physiological laws, nature endeavors to re-establish the volume of the circulating medium by absorption from all the tissues. With this, there is increased absorption of morbid products of normal metabolism and of toxins, the result of destructive influences of heat upon animal tissue. There is in addition other waste products to be removed by the blood as a carrying agent that would otherwise have been excreted by the skin, which is now injured. The blood has been disorganized and its functions to this extent limited and a condition of toxemia of greater or less intensity supervenes. The urine is often suppressed, a result of renal inflammation brought about by overwork and the action of the increase and concentration of toxic bodies present in the circulation. Vomiting and diarrhoea are suggestive of toxemia and are nature's efforts at complementary elimination. Thrombosis, with its chain of sequelae, occurs as a consequence, chiefly of blood disorganization. Death is more often caused by shock and toxemia, than by other complications.

The indications for treatment are then, the relief of shock and pain, the elimination of toxins, and the prevention of infection. Sometimes the exhibition of morphine is imperative for the relief of pain, but it is to be remembered that this drug may add to renal embarrassment and should therefore be administered with caution. Wet, volatile dressings are grateful to the patient since they are cooling and therefore relieve pain. A gauze dressing kept moist with boric acid and alcohol solution, relieves pain, promotes secretion from the burned surfaces, to this extent assisting

in the elimination of waste products and preventing the maximum absorption of toxins, the product of heat upon albumenized bodies. This dressing also acts as an anodyne relieving pain and by virtue of its physical actions noted above, inhibits bacterial activity, assisting in the promotion of tissue reconstruction.

It should be borne in mind that when applied to large surfaces, sufficient boric acid may be absorbed to produce toxic symptoms. Combined with alcohol, as before noted, I think this unlikely, although to make sure the local applications could be made to alternate with sterile salt solution. An obvious advantage of these dressings in burns is the lessened necessity for frequent changing of them.

Sterile salt solution infusions should be employed with a view of diluting toxins, relieving thirst and enabling the kidneys to continue their functions. Rest, quiet and an easily assimilated diet of a liquid character are indicated. Ordinarily, the bowels should be opened by small and repeated doses of salines given in rather large dilution. Abscesses, carbuncles, boils and felons are as a general thing, found in individuals, who, from disease unhygienic living, overwork, or other circumstances, suffer from a condition of lowered vitality. Therefore, proper elimination by way of the bowels, proper diet and surroundings, rest and position, should be secured.

Abscesses, boils and felons, where pus is unmistakably present, should be painted first with pure carbolic acid until the area so treated turns white. It should now be mopped off with 95% pure alcohol, the surrounding area mopped with pure tincture of iodine and the skin incised only sufficiently to allow an escape for the pus. As Oschner states in his excellent paper, the incision should always lie within the line of demarcation or distal to it, and in the case of felons, particularly when situated within the thumb or little finger, an esmarch applied proximally to prevent absorption, until the veins and lymphatics may be blocked by the local application of tincture of iodine after wiping out the pus from the cavity. Large boils and abscesses after incision may be washed out with an irrigator following incision, after which they are mopped out with pure carbolic acid or tincture of iodine. A gauze drain may or may not be left in and a thick dressing applied and kept moist with alcohol and boric acid solution 1-5 or stronger. After incision, boils should never be squeezed. This process is injurious to the already damaged tissues and favors a wider distribution of the agents of infection.

In the early stages, a boil can be successfully treated by washing thoroughly with soap and water, painting with carbolic acid and alcohol and applying tincture of iodine to the surrounding skin and with a wooden toothpick wrapped with a little cotton, dipped in pure carbolic acid, penetrate the boil through the little pustular cap to the bottom.

This may be repeated, until the interior has received a thorough application of the phenol, after which a thick gauze dressing, moistened with the alcohol and boric solution is applied and kept in place and moist for

twenty-four or forty-eight hours, when it may be treated as before. The treatment of carbuncles is practically the same, the carbolic acid being carried down and into every little pustular eminence until all have been in like manner thoroughly treated. Incisions in carbuncles are useless except for purposes of removal or when there are large accumulations of pus to be liberated, an unusual condition. Carbuncles, with very few exceptions, will almost invariably get well without resorting to incision or excision. I have seen carbuncles of the upper lip heal entirely within one week from only one treatment of the phenol, alcohol and tincture of iodine and with one dressing of moistened gauze that remained in place but thirty-six hours. Pathologists state that the inflammatory process extends laterally in the subcutaneous tissue, but the results of this treatment leads me to believe that this process of infection proceeds from above downward, the microbic agents gaining entrance through the follicular openings beyond the line of demarcation, after which the destructive, necrotic process proceeds subcutaneously in all lateral directions, enlarging the originally infected follicular openings until the skin surface within the circumscribed area of infection resembles the perforated lid of a pepper box. The line of demarcation is continuously withdrawn and reestablished so as to include within its limits all newly infected territory. It is extremely important therefore that the skin surrounding a carbuncle be thoroughly disinfected and kept so. For this purpose, nothing is superior to phenol, alcohol and iodine tincture of which the latter may be used in full or 50% strength. When these infections occur in hairy localities the depilatory of Bowdet is an excellent preliminary part of the treatment. Its composition is cal-cii, causticii pulveris, or unslaked lime 10.0, sodii sulphid 3.0 and pulv. amyli 10, to be separately pulverized, mixed and kept dry in a tightly stop-ped bottle. To use, enough water is added to make a thin paste and this spread on 1-8 of an inch with a spatula. After leaving for five minutes, the hairs will all be melted, when the whole is washed away with sterile water. The depilatory is antiseptic and should therefore be applied to an area sufficiently large to include all superficial infection, after which the usual soap, water and other preparatory treatment follows.

The most insignificant appearing skin prick or abrasion is sometimes the atrium or focus of extremely virulent septic infections. There is red-ness, pain lymphangitis and enlarged and tender lymphatic glands. There is no localized abscess or pus accumulation other than perhaps a slight serous exudation. The temperature and pulse are usually high and delirium and restlessness quite common. Incision for purposes of drainage are absolutely unwarranted because they are not only useless, but are most cer-tain to open new avenues and surfaces for further absorpton and infection. If, as is usual, the focus is situated in a finger or elsewhere in an extrem-ity, the usual methods as outlined above, should be employed, enveloping the entire hand and arm to the shoulder with a copious dressing liberally moistened with the boric acid and alcohol solution. Rest and position in bed, a clearing out of the bowels, a light and easily assimilated diet are

next in importance. Internally I often prescribe a mixture of bichloride of mercury, tincture of iron chloride, glycerine, alcohol and simple syrup, each dram representing from 1-16 to 1-8 of the bichloride and 10 to 20 minims of the iron with directions to take a teaspoonful in water every three or four hours during the daytime, throughout the active period of the disease. I have never seen symptoms of mercurialism unless the treatment was persisted in after the disease had very materially subsided.

Along the lines of both the Santa Fe and Rock Island, we have had for treatment many cases of creosote dermatitis caused by handling creosoted cross-ties. The rubbing occasioned by the burning and itching and the mopping of sweaty surfaces, served to intensify and spread the inflammation. Our treatment was usually very disappointing until we covered the part with a dressing saturated with the boric acid and alcohol solution, which afforded complete relief at once, being followed by a speedy cure.

This treatment is equally effective in the dermatitis caused by rhus toxicodendron or poison ivy.

I am indebted to my assistant, Dr. G. S. Baxter, for this information, he being the first to use it in ivy poisoning. It relieves the discomfort at once, the dressing absorbs and removes the exuded serum, thus effectually preventing further invasion of healthy skin surfaces.

BRONCHO PNEUMONIA.

Dr. T. C. Sanders, Shawnee, Oklahoma.

Broncho pneumonia, also known as capillary bronchitis, lobular pneumonia and catarrhal pneumonia—is an inflammatory disease of microbial origin of the terminal bronchi, bronchioles and adjacent alveoli, and is characterized by variously sized areas of consolidation scattered through the lungs.

The great majority of cases of this type of pneumonia, occur in infancy and early childhood up to age of three or four years, becoming rarer in later childhood and exceedingly rare in adults. It is predisposed by unsanitary conditions, poor hygienic surroundings, previous debility, and especially by adenoids, enlarged tonsils, or any catarrhal condition of the air passages. It may occur primarily as the result of exposure, or following a simple cold or bronchitis, but it is in nearly every instance a secondary trouble or complication of some pre-existing condition. It is particularly liable to follow in the wake of measles, pertussis, diphtheria, influenza or any of the acute infectious and contagious diseases. Mixed infection is the rule in most cases, and the micro-organisms usually revealed by the microscope are some of the following: streptococcus pyogenes, staphylococcus albus and aureus, bacillus of Friedlander, micrococcus lanceolatus, and should it follow diphtheria the Klebs-Loeffler bacillus may be also found.

The so-called inhalation pneumonia is a type of broncho pneumonia, and may be caused by the passage of particles of food or drink into the trachea and thence into the bronchi, or it may follow operations upon the pharynx or larynx and the inhalation of bits of blood clot, or it may occur in those individuals whose occupation necessitate the inhalation of dust laden air. Viz.: coal miners, stone cutters, etc. It is this form of broncho pneumonia that we are most liable to have abscess or even gangrene of the lung supervene.

The lesions in broncho pneumonia are as a rule multiple, and may be found in any part of the lung, the consolidated areas may be small, consisting of an inflamed zone surrounding a single bronchus, or it may be large formed by the coalescence of several such areas.

Broncho pneumonia develops by the regular invasion of successive portions of the lung, and there are not any clearly defined stages as in lobar pneumonia, all stages sometimes being present in different portions of the same lung at the same time.

The onset may be sudden by a chill or a convulsion, but usually it is gradual with cough, fever, increasing dyspnea, etc.

In the secondary form arising in the course of a bronchitis or of some

one of the contagious diseases, we have the symptoms of the primary condition to which is added a frequent cough of a short and hacking nature, restlessness, elevation of temperature, a marked acceleration of pulse, increased respiration 40 to 60 per minute, increasing dyspnea and often cyanosis, the alae of the nose dilate and contract, especially in the young. Expiration is more or less grunting at times.

The fever runs a remittant irregular course, usually reaching its height in from 3 to 5 days, average range being between 99.5° to 104° or 105° F. the height of the fever being a fair index to the virulence of the disease, death and low temperature occurring only in very feeble children. Likewise the cough may prove quite an index to the vigor of the child and progress of the disease, when the cough becomes feeble it would mean respiratory or other organic failure.

Children up to 5 or 6 years of age as a rule do not expectorate but swallow the material coughed up, which may be one cause of a good many cases of diarrhoea occurring with broncho pneumonia. The expectoration seen in older children is of a mucopurulent character. At the outset we usually find the ordinary signs of bronchitis without any consolidation, but as the areas of consolidation develop, these signs are replaced by the addition of consolidated areas, together with fine moist sub-crepitant rales. The areas of consolidation may be recognized by light percussion, though this is something quite difficult if areas happen to be very small, and are best recognized by using stethoscope—moving it about over lung while child is made to cry or breathe deeply, and locating areas by increased vocal remitus to resonance. The most likely place to locate these areas is just under the angle of the scapula in the lower lobe of one or the other lung.

Vomiting and convulsions may occur at outset of disease, but occurring in latter part are serious symptoms.

The appetite is usually poor and nutrition suffers, strength being rapidly lost. When the symptoms become severe, the child grows quieter and more submissive, which is a characteristic feature, and also a valuable guide as to the condition of patient.

As stated above there are no marked stages in broncho pneumonia, the symptoms vary from day to day (sometimes even from hour to hour) your patient's condition one hour or day may be what you consider fine and with every evidence of improvement, when in the next hour, or day you will find him with all the symptoms of a new attack of broncho pneumonia, the result of an invasion of some other lobule or lobules, hence the protracted course of the disease and consequent exhaustion.

The heart should be watched closely, a feeble first sound being of bad import.

The tendency of broncho pneumonia is toward recurrences and relapses, the usual duration being from ten to twenty-one days, though some cases may run one to two months, while others tend to become chronic, running several months and having a very slow and imperfect resolution.

The most serious sequella to be feared is tuberculosis, broncho pneumonia seemingly rendering the little patient very susceptible to this terrible monster. Pleurisy, enteric troubles, meningeal symptoms, and abscesses, and rarely, gangrene of the lungs are some other conditions that might complicate broncho pneumonia.

The diagnosis is not always easy and it behooves us to examine critically all our cases of bronchitis and infectious diseases for a possible intercurrent pneumonia, which is recognized by cough, an accelerated pulse, increased temperature, rapid respiration, fine moist subcrepitant rales, bronchial respiration and areas of consolidation. It is most likely to be confounded with lobar pneumonia, especially if the consolidated areas are large, but in lobar pneumonia we have a more sudden onset and a more persistent high temperature. Plastic pleurisy may also confuse physical signs.

The prognosis is always serious, especially in infancy and up to one year of age, and next to enteric troubles this disease stands foremost as a cause of infant mortality. The prognosis depends largely upon the previous condition of the patient and the primary disease, if broncho pneumonia is secondary, and upon the course and height of the fever and complications. Those cases following pertussis and measles are the most serious. In very severe cases death may ensue in 24 to 36 hours. Statistics variously place mortality at from 20 to 50 per cent in private practice, and higher in hospital practice. The most common causes of death are exhaustion, respiratory and heart failure, toxemias and complications.

As to treatment prophylaxis is of the utmost importance, and consists of the proper care and treatment of any catarrhal process of the air passages, and of all cases of acute infectious and contagious diseases, and especially the avoidance of too early exposure after same and the removal of adenoids and enlarged tonsils. By the strict observance of the above rules I feel that we will prevent many cases of broncho pneumonia.

When called to a well developed case of broncho pneumonia it is imperative to put patient to bed and secure as near absolute rest and quiet as possible, in a well ventilated room or apartment, and endeavor to maintain a uniform degree of warmth about 70° F. at all times. A room with an open fireplace or grate is most desirable, also endeavor to keep air moist. Avoid at all times too much noise and disturbance in sick room, and especially avoid unnecessary handling of patient and too frequent examinations, which do no special good, but tend to exhaust patient's strength and patience.

The treatment in a measure is more or less symptomatic and should be supportive all the way through. The clothing and bedding should be light and at the same time warm and thoroughly protective, patients seem to do best between thin woolen blankets; the body clothing should be so adjusted that it may be taken off and on for baths, applications, etc., without much handling of patient.

There seems to be quite a diversity of opinions regarding the useful-

ness of counter-irritants, but in my own experience I feel they have served an excellent purpose in the first few days of the disease, when there was high fever and hot dry skin, distressing cough, painful dyspnea and tightness of chest; at this time the application of a hot poultice or a mild mustard paste to the posterior surface of lungs for 20 or 30 minutes, followed by the immediate application of camphorated oil rubbed in well over entire chest will give quite a bit of relief, or sometimes simply applying warm camphorated oil, or turpentine 1 to 8 of olive oil several times daily serves the same purpose. After each use of poultices or applications, which may be as often as every 3 or 4 hours, the chest should be enveloped in a cotton or cotton wool jacket; after the first two or three days it is seldom necessary to use any counter-irritant to the chest, the jacket being all that is required.

When the bronchial secretion is more or less tenacious the cough distressing, dyspnea marked, etc., steam inhalations, to which is added tincture benzoin compound in the proportion of 1 drachm to the pint of water used as often as the requirements of the patient demand will very effectively relieve.

At the inception of the disease the bowels should be opened by five or six doses of calomel—one-tenth to one-half grain, given every half hour.

In the early stages when the pulse is full and bounding tincture of aconite in 1-4 to 2 m. doses depending on age of patient, given every two or three hours will relieve circulation.

For the cough when distressing small doses of *puly. ipieae et opii* or if in addition there is high fever and restlessness small doses of phenacetin or antipyrin may be added; however, the last two drugs should be used cautiously on account of their depressing effect, first try to relieve by sprays to the nose and throat, sponging, etc.

Upon the appearance of any evidence of circulatory weakness, stimulation is imperative, and our chief reliance lies in alcohol, usually in the form of whiskey or brandy from 10 to 20 m. of either every 2 or 3 hours or strychn. sulph. 1-250 to 1-200 gr. given at the same interval, this dosage for a child from 1 to 2 years of age.

In attacks of respiratory failure give full doses of strychnine or atropine or make child cry by spanking, or alternate use of hot and cold applications of water to chest, which causes deeper inspirations and freer oxygenation of the blood. In the event of collapse hot mustard baths serve a good purpose.

As nutrition suffers and the strength of the patient is sorely taxed, it is important to offset this by the proper quality and quantity of food, watching digestion at all times. The food should be liquid in the form of milk, broths, etc., with the addition of digestants if need be, and given in the proper quantity every 2 or 3 hours. Any disturbance of the bowels as a result of indigestion should be met by enemas or laxatives.

I have purposely avoided mention of emetics and expectorants as they are rarely indicated, and their indiscriminate use is quite dangerous, better

use means mentioned above, they are much safer. Sponging with cold or hot water depending on individual patient is the best means of controlling temperature or some use full bath or packs for this purpose.

Toward the end of broncho pneumonia chloride of ammonia and syrup hydriodic acid will help to clear up cough and promote resolution.

Resolution in most cases being slow and oftentimes imperfect, it is quite important to guard convalescence closely. Here our dependence lies in general tonic treatment with such drugs as ferri, quinine, strychnine, aleum morrhuae, etc., and an abundance of good food of the proper kind, and plenty of good pure air.

In closing I wish to say that the object of this paper has not been to try to advance any particularly new ideas or theories (for there is but little new in the past few years concerning this disease) but to bring to your view and impress upon you some of the more important points, and should these few remarks help you in alleviating the sufferings of, or in possibly saving the life of some little sufferer, I shall feel more than repaid for my feeble effort.

ABSCESS OF THE SPLEEN.

By F. L. Carson, M. D., Shawnee, Oklahoma.

The spleen is a ductless gland, essentially a lymphatic structure, and is classed among the accessory organs of nutrition. Our knowledge of its function is very imperfect. It is supposed to have an internal secretion, but as its removal is not incompatible with health, we must conclude that its function can be carried out by some other organ.

Anatomically, the spleen is the most protected of the abdominal viscera, being well up under the left costal arch, overlaid by the lungs and covered in front by intestines. It is subject to great changes in size, which unless extreme will escape detection;—percussion being exceedingly unreliable and palpation is only possible when the organ is enlarged enough to be felt under the free margin of the ribs.

According to Mayo (1), the spleen becomes enlarged as a result of:

1st—Leukemias,

2nd—Splenic Anemia,

3rd—Splenomegalia,

4th—(a) Compensatory hypertrophy accompanying cirrhosis of the liver.

(b)—Enlargements which are the result of infectious diseases, i.e., malaria, tuberculosis, syphilis and typhoid fever.

It will be seen from this classification that enlargement of the spleen from abscess is so rare as to be almost negligible, yet it is well known that such a condition is occasionally encountered.

Suppuration on the spleen is infrequently found. This is explained Arami and Nichols (2) on the assumption that it possesses strong bacteri-acidal properties.

Abscesses of the spleen are divided into primary and secondary. Primary abscesses are very rare. Moynihan (2) claims that undisputed evidence of the existence of such a case is not to be found. Johnson (4) says that abscesses are always secondary.

However this may be, there remains a group of cases in which it is impossible to discover any foci, and the only explanation is that the infection is hematogenous.

Secondary abscesses are due to foci elsewhere in the body, and may originate from infection in any organ. The process usually begins as a hemorrhage or infarct into the gland; suppuration developing later.

In connection with malaria, splenic abscess has been found. During my internship in the Charity Hospital, New Orleans, I assisted Dr. Bachelor resect a rib and drain an abscess of the spleen in a patient suffering from

aestivo-autumnal malaria. In the case I wish to report here, malaria was possibly responsible for the condition.

Miss J. C.: Age 25 years, native of Arkansas.

Occupation: Telephone operator.

Family History: Mother and father both living as are five sisters. Mother is suffering from chronic pulmonary tuberculosis.

Previous History: Patient had measles, mumps and whooping cough as a child; repeated history of malaria. At 15 years of age had 24 chills, all tertian in type; at 23 years of age had two chills also tertian. All the intervening years patient was anemic and in poor health. In 1905 she had an attack of influenza.

Present Illness: On Feb. 26th patient called a doctor who made a diagnosis of pleurisy. Until March 1st patient had no fever; on this date had a chill followed by fever; after this about 7 o'clock p. m. patient would feel chilly and fever was continuous but of low grade—99 to 101°. Vomited five or six times daily. On March 21st another physician was called who made a diagnosis of "kidney trouble." On March 26th Dr. Anderson took charge of the case and it was with him that I saw her on March 31st.

Examination: Young lady somewhat emaciated, mucous membranes pale, pulse rather rapid but regular, temperature 99½° F. In fact the patient presented the appearance of suffering from a mild sepsis. There was a mass in the left loin extending from the costal margin to the anterior superior spine of the ileum in front and filling the lumbar region posteriorly. On percussion over the mass there was flatness only. The urine contained a small amount of pus.

The liver dullness was normal, no rales in the lungs, no cardiac murmurs and no tenderness elsewhere in the abdomen.

A tentative diagnosis of peri-renal suppuration was made, operation was suggested and accepted.

Operation: April 2nd, 1908: The region of the kidney was explored by an aspirator with negative results. An incision was then made and the kidney palpated and found normal, but a mass was felt farther forward, so the wound was closed and another opening made through the left semi-lunar line. On opening the peritoneum an enormous mass proving to be the spleen, was encountered.

While exploring and attempting to deliver the greatly enlarged spleen an abscess containing about six ounces of thick, yellow, non-odorous pus was ruptured. The abscess was located on the inner concave surface, near the tail of the pancreas. Rubber drainage tubes were inserted and the wound closed.

The patient made a tedious recovery and is well at the present time, three and a half years since the operation.

It is worth mentioning that while the abdomen was opened and before the abscess was found, that the ovaries, tubes, appendix and gall bladder were palpated and nothing found.

- (1) W. J. Mayo, Journal A. M. A. Vol. 54.
- (2) Garrow (Quoting Adami & Nichols) Bryant and Buck, Vol. 8.
- (3) Moynihan, Keen's Surgery.
- (4) Johnson, Annals of Surgery, Vol. 58.

INDICATIONS FOR TONSILLECTOMY.

Dr. J. M. Stooksbury, Shawnee, Okla.

This subject embraces points of interest of equal importance to the physician engaged in general practice, the specialist who devotes his entire time to this particular field of practice, and the patient who is afflicted with the diseased tonsil as well. The point of interest perhaps which concerns the general physician most, is to be able to conscientiously advise his patients for their best interest; however, there are times when this becomes a trying task on the part of the physician to decide, especially if the patient has scruples in regard to the surgical treatment of the tonsils. But just at this decisive moment one word spoken by the physician may be the turning point on which will depend the future success and happiness of the individual; or on the other hand a loathsome life destined to be full of failures, disappointments and suffering incident to a diseased tonsil.

The specialists' interests are as a matter of fact equally as important for this reason, for in a measure the same degree of success which may result from the specialist's procedure of care and treatment of such cases as may be referred to him by the general physician will establish that degree of confidence in the physician of the ability of the specialist, and the future relationship between the physician and specialist will rest entirely upon these conditions. Since it is true the specialist looks directly or indirectly to the general physician as a source for the majority of his work, it stands to reason the specialist must first show himself master of his specialty before he can hope to gain the confidence of the physician. The indications for tonsillectomy are not so important as is the operation itself, for seldom does it ever occur that the tonsils are removed unnecessarily; should a healthy tonsil be removed it would be no serious mistake in the least to the patient, but on the other hand, to neglect the proper treatment of a diseased tonsil by the physician or specialist is next to criminal negligence on their part.

It is conceded by our most competent clinicians that the most satisfactory method of dealing with a diseased tonsil is the complete enucleation including its investment capsule. While it is true that measures of less radical procedure will in some cases give relief to the distressing condition—such as the actual cauterization to the crypts, the incision of the crypts, the removal of the pent-up debris from the crypts, and the partial removal of the tonsil. Close observation for a year or two following cases treated after these methods have clearly proven that the tonsil is still the seat of diseased processes that existed prior to the treatment above mentioned, and in addition to the continuation of the diseased processes, the tonsil

was found to actually increase in bulk, and in many instances larger than before operation.

On the other hand, if the tonsil is enucleated within its capsule the diseased processes of the tonsillar tissue and fossa will never recur, for the fact there remains no tonsil tissue from which a new growth can spring. There has been cases reported, however, where the tonsil has reappeared after tonsilectomy, but on close examination it was found that a small portion of the tonsil had failed to have been removed, as well as the entire fibrous capsule was found intact. It is a fact, occasionally, after complete removal of the tonsil, that the tonsillar fossae will take on an inflammatory reaction, but after the second year following the operation it is seldom ever witnessed.

It is clear to my mind, therefore, after carefully considering all the clinical reports obtainable, that a majority of the cases heretofore requiring only such treatment as incision, cauterization, partial removal of the tonsil, which has resulted only in temporary relief, should be operated upon by the complete method, whereby the tonsil, including its entire capsule, is removed.

The faucial tonsil is, in reality, a large compound lymphatic gland; from its profuse vascular and lymphatic relationship to tissues and also being exposed constantly to pathological germs, it is not only a site for local changes, but local manifestations of a constitutional condition, and again, the tonsillar structure is such, that when subjected to an ulcerated condition it may be the source of systemic infection, since it is proven that a pathological tonsil may manifest a serious local condition and a local manifestation of a systemic blood dyscrasia, and a fruitful source for absorbing into the circulation obnoxious substances and pathological germs. It now suggests to us some of the conditions and indications for surgical interference.

In the following paragraphs, it should be carefully noted, that the indications mentioned, have special reference to enucleation of the tonsil in its entirety, including its fibrous investment capsule, technically known as tonsilectomy.

Indications: (a) Recurrent attacks of tonsillitis, which do not have as exciting causes, pharyngeal or aural complications demand removal of the tonsils. But I would warn against an operation during an acute attack, for to do so oftentimes is a fruitful source of infection of the wound and also of the deeper adjacent structures, which might lead to a serious termination. It was my misfortune in one instance which I recall to have an infected wound after tonsilectomy. Man, age forty years; apparently healthy in every respect. The tonsils, on inspection, gave no appearance of any acute trouble other than slight irritation, and history by patient, of occasional "sticking" pains in region of tonsil. I operated under the usual antiseptic precautions, using local anaesthesia. I feel confident in the assertion that the infection was not due to neglect on my part, but that there was already acute infection lurking in the hidden parts of a

submerged diseased tonsil, and by operating at this particular period, opened up new avenues through which infection spread rapidly. This would not have occurred had I taken the time and precaution which is always necessary in all cases giving such a history, to first treat the tonsil two or three days previous to operating.

(b) Nasal catarrh and aural diseases are often true indications for tonsilectomy. One very eminent surgeon has said that a large per cent of those cases applying for treatment for catarrh and diseases of the ear there is no plain evidence of a hypertrophied tonsil on first inspection of the throat, but, if you will cause the patient to gag, which relaxes the pillars and uncovers to our view an enlarged portion of the tonsil. Such a diseased tonsil is constantly manufacturing sufficient germ products to affect the adjacent structures; therefore the hidden or submerged tonsil, is oftentimes a greater source of infection than is the prominent tonsil, whose crypts are uncovered. It is easily explained why a diseased tonsil will give rise to aural infection, when we remember that the palatopharyngeus muscle extends to the pharyngeal orifice of the eustachian tube and inflammation of the tonsils and pillars might extend along the pharyngopalatine fold to the mucosae of the tube, and thence to the middle ear, and repeated attacks of acute infection of the tonsils would interfere with the palatopharyngeal fibres, and thus impair the muscle mechanism that controls the patency of the tube.

(c) Enlargement of the glands of the neck. As the tonsil is a part of the lymphatic system, its relationship to the glands of the neck is quite intimate, therefore, when there is a history of frequent enlargement and tenderness of the glands of the neck, it is good evidence of a diseased tonsil as the chief source of infection, and should be ablated.

(d) When the crypts of the tonsil are examined and found filled with foul debris and bacteria, and after clearing them of this foul material they seem to improve for awhile but frequently recur, the indication for tonsilectomy is highly necessary.

(e) Laryngitis with hoarseness is often due to tonsillar disease, hence the tonsil should be carefully examined and if the crypts are found in a diseased state, or if the tonsil is hypertrophied, it should be removed.

(f) Hypertrophy alone, of the tonsil, is evidence of a diseased condition, for in a perfectly normal throat, the tonsils are hidden from view by the pillars, for this reason, as a rule, the tonsil seen projecting out into the throat is a diseased one. There is a divided opinion among the profession upon this point. Some writers hold that the tonsil is an essential organ of the body, while others believe it to be a pathological entity. Bacterial infection, when continued very long, causes either hypertrophy or hyperplasia: when thus changed its function as a lymphatic gland is impaired or lost, and the physical economy is best served by its complete enucleation.

(g) Chronic follicular tonsilitis is another condition which offers very little hope of a cure with the ordinary simple treatment. Even if the

crypts are obliterated by the use of the actual cautery, the extreme feeble vitality of the tissue predisposes to infection and inflammation; for this reason tonsilectomy is evidently indicated.

(h) Follicular pharyngitis is often caused by chronic suppurative follicular tonsilitis and it has been known to disappear entirely after the tonsils have been removed.

(i) Tubercular infection often has its origin in the tonsils, and when such a process is demonstrated or even suspected, the tonsils should be enucleated at once, and thus check the absorption into the circulation.

(j) Recurrent articular rheumatism, which sometimes follows an acute attack of tonsilitis, is a plausible indication for tonsilectomy. Therefore it is clear to my mind that we are just entering upon a new era of studying the relationship the pathological tonsil bears to the local and general systemic infection, and ere the dawn of a few short years we will not be groping in the darkness of fancied theories along this particular branch of surgery, but will be practicing our art upon more sound and proven facts.

AUTO-INTOXICATION.

J. M. Byrum, M. D., Shawnee, Oklahoma.

Auto-intoxication as we are trying to understand it today is not the auto-intoxication that was taught us when we sat in the bull pen some fifteen years ago. Perhaps it is a true prophecy to say that it is not the same this evening that it will be fifteen years hence. The physiological chemist has been busy with his reagents and is only beginning his engagements; the microscopist has been diligently using his slides and is still "seeing things;" the clinician is ever watchful at the bedside, in the diet kitchen, and at the toilet. The things we eat today do not seem to take the same course in digestion that they did when we proudly accepted that diploma as evidence of complete knowledge of medicine. We did not know it all then; we do not know it all this evening.

The definition of auto-intoxication as it appears to me this evening is: A toxemia caused by the perversion of the bacterial digestion and a failure of the anti-toxic and other glands of the system to properly care for such toxins. Some twenty years ago, Bouchard gave publicity to his views on this subject but Bouchard then wished to include all the toxemias of a perverted glandular activity; all the toxemias of the various infections introduced from without the system; the toxemias of perverted metabolism; and the toxemias we now recognize as ptomaines, introduced into the digestive apparatus with the food or water. There is also a toxemia of absorption which is not properly included in auto-intoxication, as from pus cavities, ulcerated surfaces, the malignant conditions and a great many others.

When the end products of bacterial digestion, from any unnatural condition of the alimentary canal, are produced in excessive quantities or when the protective glandular system is unable to care for all the toxins produced, the excess is thrown into the circulation and a poisoned condition exists—we have auto-intoxication.

With this definition of the subject, it will perhaps be necessary that we revise our old chemistry of digestion. Within the alimentary canal are two perfectly organized systems of digestion; that by which the enzymes convert starches into sugar, emulsify fats and transform the albumins into peptones; and that much more complicated as well as complete digestion which is due to the bacteria which inhabit the alimentary canal. I will not here undertake to say that these microbes have their habitat in the digestive tract but will say that they have a useful, if not an indispensable, function in this digestive process. Of these several families of bacteria, there are some which thrive only in the starches; others, in the fats and still others, and these are the most numerous, in the albumins. More than

this, the albumin is a natural culture medium for nearly all the bacteria, depending upon its reaction whether acid or alkaline. In the capacity outlined, these bacteria are supplementary to the enzymes and perhaps, physiologically, do many things which the enzymes can not do. What this complete supplementary function is, we can not say but we have it on good authority that they render assimilable many foods which the enzymes are incapable of handling, cellulose, for example. If they can do this, it is but fair to presume that their presence in the digestive tract is not accidental. If they were only an accident, why is it necessary to have the systems of antitoxic and other glands standing guard, at all times, between them and the general system? That they are indispensable, seems proven by aseptically taking guinea pigs from the mother's womb and feeding them on a well regulated but aseptic diet. The animals do not thrive as well as the control animals. Fowls so taken and treated, die while the controls do perfectly well.

Aside from this useful function, these bacteria have another function. With equal facility, they convert the digestive tract into a veritable laboratory of poisons. Whether this process of separating the poisons from the elements to be absorbed for assimilation is a natural and protective function or whether it is a perversion, I am not prepared to say. It is perhaps both.

It is not the purpose of this paper to go into the complex chemistry of the action of these microbes upon the albuminous molecule nor of the resulting toxic bodies produced by its decomposition. At present, we are content merely to mention the fatty volatile acids, the ptomaines and leucomaines, the aromatic bodies and the various gases as being a resume of the putrefactive processes, leaving it to a future paper to go into the analysis of the various bodies composing these complex groups. The constant and ever changing formation of these loose compounds and the easy substitution in the various radicals, account for the almost endless number of toxins with which the system is burdened. Within the same system a kind and conserving Providence has placed an anti-toxic process of equal amazing chemical complexity in which there are more substitutions in other similar or different radicals and by which the toxicity is completely overcome or very materially modified and made ready for easy elimination or for further synthetic use in the economy. This anti-toxic process has been ably presented this evening by Dr. Hughes in his essay on Immunity. His "haptophores" and other illustrations of an elastic and accommodative vocabulary, are quite new to us, yet advancing medicine compels us to lend an attentive memory. We are just beginning to learn why we continue to live and at the same time harbor a laboratory of such deadly poisons.

The designing Architect of our body did not leave the anti-toxic glands alone in the defense of the system against auto-intoxication. The other factors are the mucus membrane and the liver, all three defenses placed between the source of infection and the general system.

The mucus membrane of the digestive tract, itself, has at least two separate defenses. First, the secretions and second, the cells. By its secretions, a great many substances are precipitated and expelled from the bowel as excreta. Other substances are directly antagonized by the digestion of other food elements than albumin. The acid reaction of the small intestinal tract, maintained by the microbial fermentation of the carbohydrates has much to its credit in protecting the albumin derivatives against the proteolytic anaerobic bacteria which would otherwise be very active in the alkaline intestinal juices. This acidity is further augmented by the normal flora of this region, the two principal of which are the *B. coli* commune and *B. lactis aerogenes*. It might be well, in passing, to remark that it is upon this principle of reaction that the putrefactive disturbances are so marked in enteritis in which inflammations, the contents of this gut are neutralized or rendered alkaline.

The cells of the mucosa are protective because they directly absorb hexone bases and amino acids and convert them into synthetic albumin, one of several illustrations in the organism where two or more poisonous compounds are united into useful, living tissue. These cells also have an anti-toxic influence, perhaps in a similar chemical process of substitution or abstraction in uniting several deadly poisons into compounds less noxious or completely harmless. In 1887, Charrin and Cassin showed that a series of toxins lost their toxicity completely when introduced through the digestive tract; whereas, a dose fifty times less strong would prove fatal when introduced directly into the circulation.

The second line of defense is the liver. All the toxins escaping the mucosa of the intestine or which are rendered into less harmful compounds, are gathered up by the portal circulation and dumped into the liver. The sodium and potassium properties are used up principally in the formation of bile. The amido acids and ammonia are reconstructed into urea. Ammonia is a deadly toxin while urea is but slightly toxic. The nucleins and xanthis bases, both far from being non toxic, are transformed into uric acid, which is scarcely toxic and is rather easily eliminated. The aromatic bodies, most of which are very toxic, are combined with sulphuric and glycuronic acids into compounds less toxic and more readily eliminated. And so on through the list of entero-toxins. It is said that the liver destroys two-thirds of the poisons of digestive origin. Hepatic insufficiency, then, is an important factor in auto-intoxication. This insufficiency will account for many cases of auto-intoxication when the putrefactive changes in the digestive tract are not above normal. If properly interpreted, "biliousness" expresses this condition about as well as to say "auto-intoxication of hepatic origin."

The urine in auto-intoxication is a subject too extensive to receive extended consideration in this paper. It is an index our masters followed in ferreting out the conditions included in the subject of this paper. We will do well to have a thorough analysis of the urine in all abnormal conditions of the system. Renal insufficiency alone will lead to a reten-

tion of the various products of albuminous putrefaction and consequently auto-intoxication.

In closing this paper, I must quote from Combe of Switzerland, that "We can see, that, whether we consider the anatomy or physiology of the digestive tract, whether we examine the symptomatic picture presented at the clinic or whether we should seek in biological chemistry or experimental physiology for decisive and scientifically demonstrated proofs, we find everywhere evidences of the existence of intestinal auto-intoxication. This condition presents a particular etiology, a distinct pathogeny, a well defined clinical picture and symptomology, a very special prognosis and treatment; more than enough to make an entity of it and more than enough to justify the detailed study of gastro-intestinal auto-intoxication. It explains the symptoms of which our patients complain, and better than any other does it indicate the most suitable therapeutic means to employ."

IMMUNITY.

By J. E. Hughes, M. D., Shawnee, Oklahoma.

The study of immunity in its different phases, and the various processes by which it is established, has given us a new and growing field of true scientific worth.

Unfortunately, in the elucidation of this subject, new words and strange phraseology have sprung into use, which are foreign to the vocabulary of most medical men.

But since sero-therapy and vaccine-therapy have so much to offer in the prophylaxis, diagnosis and treatment of disease; and that so many physiological and biological problems are being brought to light, it behooves every physician to familiarize himself with these immunizing bodies.

We all know that diphtheria anti-toxin will cure diphtheria, that the serum of a typhoid patient will clump typhoid bacilli, and that phagocytes will ingest and destroy certain micro-organisms—but how and why these changes take place we have been too reluctant to inform ourselves. In the explanation of these phenomena observed in the process of immunization, Ehrlich's "side chain" theory affords us the best working hypothesis; and in the light of our present day knowledge this theory conforms to what we know to be most nearly exact. This theory is that cells are bound to other cells or other organic substances by certain bonded factors called receptors. These receptors are the "side chain" of Ehrlich and are analogous to the structural formula of the benzene ring of organic chemistry, in which complex molecules have the property of combining with other atoms, forming new chemical substances. Likewise the protoplasm of the cell through its receptors or side chain are bound to other substances, whether it be a food or toxin, either to nourish or destroy the cell. This union is generally believed to be, and according to Ehrlich, is a chemical one. Its uniting groups are known as the haptophore or binding groups.

Receptors are not always simple in structure. We have receptors of the first, second and third order. Some have only the haptophore portion. Others have, in addition to the binding portion, the toxophore or poisoning group. While others still more complex have a double haptophore, and is called an amboceptor.

Let us deal with something more tangible. Take a case of diphtheria for example, diphtheria bacilli of the throat secrete a soluble toxin which finds its way into the general circulation. This toxin body also possesses a haptophore and a toxophore group. Now if the cells of the body have receptors, which will unite or fit the haptophore of the toxin there will be a union and an injury to the cell. On the other hand if there are no re-

ceptors for this particular toxin there will be no harm done. This is natural immunity. When the cell is injured by the toxin the equilibrium of the cell-protoplasm is disturbed, and according to Weigert's law of tissue repair, the tissue responds to the formation of new receptors. This stimuli results in an overproduction of receptors—a hyperplasia. The excess of receptors are soon cast off as anti-toxic bodies to float free in the blood plasma, still capable of combining with the toxic bodies through its haptophore group. In this manner the body cells are saved from further injury, and the child may recover from diphtheria. This is acquired, active, antotoxic immunity.

Now let us see what diphtheria antitoxin does, and how it acts as a preventative and cure. If we inject a horse with diphtheria toxins in small and increasing doses, and so stimulate his cells to produce free receptors, then bleed him and inject his serum containing these receptors into a diphtheria-poisoned child, these receptors or anti-toxic bodies not only unite with the toxins which are present in the blood serum, but are capable of wresting from the cells the toxins which have already united with the receptors of the cells. Thus the child is saved by antitoxin. This is acquired, passive, antitoxic immunity.

Many observers hold that the diphtheria bacilli secrete two toxins; one which produces the active symptoms of the disease, the other of longer incubation period, having a greater affinity for nerve cells. This toxin produces the so called diphtheritic paralysis.

This special predilection of toxins for nerve tissue is best typified by the toxin secreted by the tetani bacilli. Experimentally when this toxin is injected intravenously, it disappears from the blood in a few minutes, to appear in the ganglionic cells within two hours from the time of injection. In test tube tetani antitoxins and tetani toxins neutralize much more slowly than do diphtheria antitoxins and diphtheria toxins. This phenomena explains why antitetanus toxin is not curative but only a preventative.

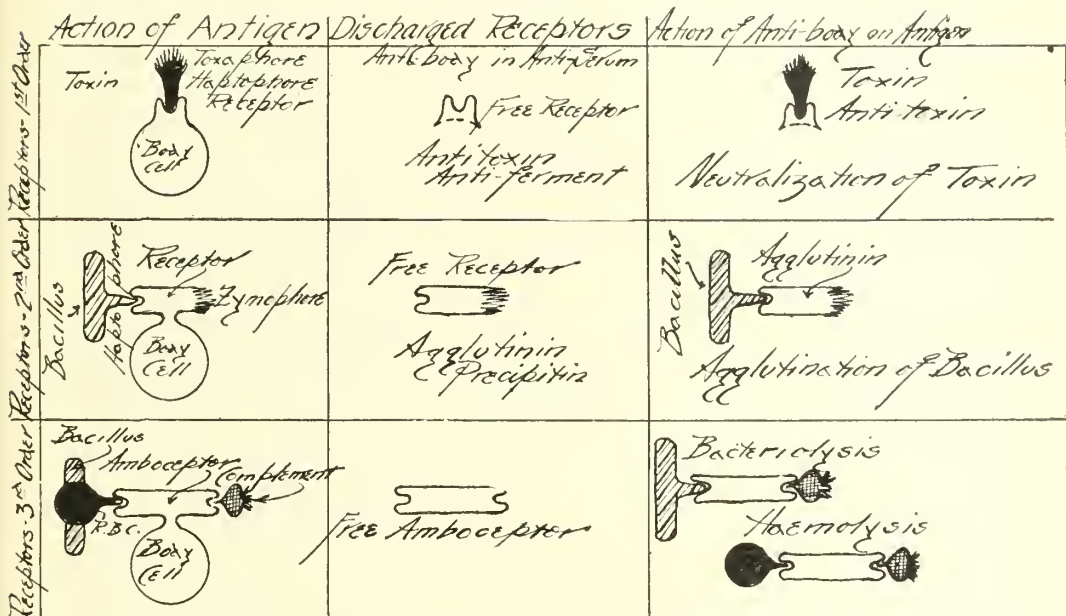
So far the receptors have only served as neutralizing bodies. Antitoxins are not bactericidal. They will not kill the bacteria. In fact, diphtheria antitoxin and tetanus antitoxin are very good culture media for their respective bacteria.

Now we will pass to the study of receptors of the second order. These are more complicated in structure. In addition to their haptophore group, they possess a toxophore or zymophore portion. These are double portioned receptors, which serve as modifying bodies only. To this class belong the agglutinins, precipitins and complements.

The Widal test for typhoid is dependent upon the agglutinins. The typhoid bacilli are in the blood; the bacilli themselves contain the agglutinable substance called agglutininogen. The endotoxin of the bacilli stimulate the cells to the formation of new receptors, which bodies are the real agglutinins. Now when the serum of a typhoid patient containing these free agglutinins, is mixed with a typhoid culture the bacilli become

non motile, shortened and stick together forming clumps. This is agglutination. Remember that the agglutinins do not kill the bacilli—they are only modifying bodies, and are not the bacteriolytic bodies which destroy the bacilli.

The medico-legal test for human blood is perhaps the most striking illustration of precipitins. If a rabbit is injected with small and increasing doses of human serum, its tissues are stimulated to form new receptors, which fit human serum only. These cells soon shed their receptors



into the serum. Now if the rabbit serum containing these free receptors is mixed with human serum these receptors through their haptophore group will unite with certain chemical substances in the human serum, and the zymophore will precipitate them.

We have now come to the consideration of receptors of the third order—i. e. the bacteriolytic, haemolytic and cytolytic amboceptors. These are far more complex and more difficult to understand.

We have seen how the receptors of the first order could neutralize bacterial toxins, how receptors of the second order could maim and cripple bacteria by agglutination. We will now attempt to explain how bacteria and other cell bodies are actually destroyed.

Let us take typhoid for example, and see how typhoid bacilli are destroyed; and see why an immunity is established. The endotoxins of the bacilli unite with certain receptors of the body cells causing the formation of many new receptors, which soon become free bodies in the serum. These bodies are unlike the agglutinating bodies in that they possess two haptophore or binding groups. One portion known as the complementophilous-haptophore the cytophylous-haptophore. This body is neither toxic or antitoxic, nor in itself bacteriolytic. Now there is always present in

the human serum a body known as the complement, its origin is not definitely known; leucocytes are at least one of its sources. It is likened unto a toxin. This is the body which unites with the complementophilous-haptophore of the amboceptor; the cytophyllous-haptophore unites with the receptors of the bacteria. Then the complement through its intermediate body destroys the bacteria. This is acquired, active, antibacterial immunity.

Now suppose we take a culture of typhoid bacilli and kill them by heat. Then inject the proper number in a normal individual, say three doses extending over a period of four weeks, what change will take place in the serum of the individual? Probably immediately after each injection we will have an increased susceptibility to typhoid. This period is known as the "negative phase," caused by a temporary decrease in the complement and opsonins of the serum. These soon return to normal. New amboceptors are rapidly formed then we have an increased resistance to typhoid known as the "positive phase." This is acquired, passive, antibacterial immunity.

The treatment of typhoid with bacterins can be of little value except in possibly cases of relapse. Here bacteria may stimulate the formation of more active amboceptors, and thus hasten immunity. No doubt just such a condition exists in the bacilli carriers of typhoid. Here the bacilli and tissue cells have long since ceased their warfare, are under a flag of truce, and require new stimuli in the form of fresh typhoid bacilli to stimulate the formation of more active bacteriolytic amboceptors.

But in an active case of typhoid when there is already a profound toxemia, bacterins can do no possible good and may do harm, by adding more fuel to the fire. We must not forget that the bacteriolytic body is not the amboceptor alone, but is the amboceptor—complement—complex.

In hemolysis a very similar phenomena to that of bacteriolysis is observed. Since a very early time it has been known that it is not possible to substitute the blood of an animal for that of a man; and in a general way the same law holds with animals of different species, i. e. the blood of one animal is poison to the blood of another.

Now, if we inject into a rabbit small and increasing doses of washed red blood corpuscles of the sheep, we will establish in the rabbit an immunity against sheep's corpuscles. Free amboceptors will appear in the rabbit serum, and if this serum is mixed with red blood corpuscles of the sheep, the complement will unite with the amboceptor, the amboceptor with the red blood corpuscles and hemolysis will result.

This hemolytic system is utilized in the specified serum test for syphilis, which test is dependent upon the deviation or fixation of complement. That is, if the patient has syphilis his serum contains antibodies or amboceptors, which will unite with the infectious virus or antigen, and fix or bind the complement in the serum. Now if we add washed sheep's corpuscles and their specific antibodies the amboceptor, which were formed in the rabbit's serum, hemolysis will not result because the complement of the serum

has been already bound. On the other hand if the patient has no syphilis, there will be no antibody or amboceptor in his serum to unite with the antigen and bind the complement, then when sheep's red blood cells and their specific amboceptors are added, hemolysis will result because there is still free complement in the serum.

The phagocytic theory of immunity, as advanced by Metchnikoff, would appear in direct opposition to the theory held by Ehrlich. However, this is more apparent than real, for if we will closely study and compare these theories, while we will find little in common, we will be surprised to find so few contradictions.

Metchnikoff would explain all immunity by phagocytosis. Ehrlich would not accept such a broad assumption, admitting that phagocytes are of great value in combating certain infections, especially those which are not followed by any immunity, nor accompanied by the development of anti-toxic or bacteriological properties in the serum. Infections produced by the pneumococcus, streptococcus, and staphylococcus are examples of this class. The ability of phagocytes to ingest and destroy these micro-organisms is dependent upon the opsonins of the serum. Opsonins, meaning "I prepare food for," are independent of all other antibodies thus far studied. Metchnikoff recognized their presence in the serum and called them "stimulins"; believing that they acted upon the leucocytes stimulating them to ingest and destroy bacteria. More recent experiments by Wright and Douglas have served to disprove this assumption. Opsonins do not stimulate the leucocytes to phagocytic activity, but act on the bacteria, so sensitizing them that they may be more rapidly ingested and destroyed by the phagocytic cells.

This power of the serum to sensitize bacteria for injection by the leucocytes is expressed by the opsonic index. By this means we measure body resistance to infection. As in pneumonia, the first few days we find the opsonic index low, and in rapidly fatal cases, the opsonic curve or index does not rise above the primary depression, but sinks lower and lower. In cases which recover we find the opsonic index the highest just prior to and immediately following the crisis. This phenomena may explain the crisis of pneumonia, and how temporary immunity is established.

DIFFERENTIAL DIAGNOSIS OF BENIGN AND MALIGNANT TUMORS.

Dr. J. A. Walker, Shawnee, Okla.

Mr. President and Gentlemen of the Pottawatomie Medical Society:

The subject you have assigned me is not, of course, of my own choosing, hence all that I can promise you is that I will do the best that I can for you. Tumor is now an indefinite term. It used to be defined any enlargement or swelling. But recent pathology has eliminated a great many of the tumors of the older pathologists and we now class them in their proper category, and other eliminations will gradually come until the word tumor in the old sense will be lost sight of, at least by our Pathologists. Before ye can hope to differentiate between malignant and benign tumors we will have to know something of the histogenesis of a tumor formation. What is a tumor, and why should it grow on a normal organism? These questions are shrouded in the maze of facts and fallacies from the earliest dawn of medicine down to our own time. We know more of tumors than did our ancestors, but of the why, very little more. Since the dawn of medical history, scientists have been trying to assign a definite cause for the abnormal growth that they call tumors, but it is still shrouded in the mazy labyrinth of the unknown and seemingly ungnowable. The other dilemma is a proper and scientific classification of neoplasms. When one has built up a beautiful theory of the different forms of tumors, the light of recent knowledge divulges numerous faults and his air castles are almost or quite demolished.

Tumors were first divided into two great classes, according to their clinical manifestations, benign and malignant. And for a great many purposes it is a good working division. Then as pathologic knowledge advanced it began to dawn on the pathologist that the system was made up of many different kinds of primary tissues and that tumors originated in the first instance from one of these primary tissues, and if transplanted to other tissues retained the characteristics of the tissue from which the original tumor arose.

The etiology of tumors is of the greatest concern to all who are interested in this, the most mystifying of all pathologic subjects. While great light has been thrown on it by Virchow, as an original and primary thinker, and by all those who have followed him in his work on "Cellular Pathology," yet those neoplasms which yet remain that haven't been found to be caused by some micro-organism or a special inflammatory process, are yet buried in the debris of as deep darkness as at the very dawn of medical history. And when all is said and done it must be confessed that the essential cause of these tumors has eluded discovery. The theory of embryologic rests or foetal cell isolation may and can be

the cause of some tumors, but will not answer for any considerable number. The further we attempt to go into the origin of abnormal growths the further we seem to get from the real basis underlining them. So we must content ourselves with what knowledge that is available and look to the future for the solution. One author will define tumor as an autonomous new growth not the result of an inflammation. Another tells us that is a pathologic new formation of tissue. As to the cause of this pathologic new or autonomous growth we will have to refer you to the future. There are a few differences between malignant and benign tumors to which I may now call your attention. I shall not attempt to classify them, other than to say that a task which no one has succeeded in accomplishing, I am too wise or too ignorant to attempt. The basis of the clinic classification rests on the benign or malignant tendency of the neoplastic growth. Where a tumor is permitted to remain and is capable of doing harm only by its bulk or situation, it is called a benign growth. A tumor which proves destructive to the tissues in which it grows by infiltrating or insinuating its cells into them, or infects the lymph gland which receive the lymph from the area where it is situated or has a tendency to return after removal, is termed a malignant growth. Independent of the course and termination of tumors, there is a great difference in their anatomic construction. Benign tumors are identical, or almost so, with the tissues in which they grow. A lipoma is of normal fatty tissue. A fibroma is of ordinary fibrous tissue, and so on through the whole benign group. There are some exceptions to this rule, but we will not burden you with them. Hence these neoplasms have been termed homologous tumors. Malignant tumors, on the other hand, embody embryonic structures which are very unlike the tissue in which they are situated. As, for example, a sarcoma is a malignant neoplasm of connective tissue, and its cells and fibres are of an embryonic type and very unlike any of the adult forms of connective tissue. A cancer is a malignant growth of epithelial origin, and yet its cells are of young foetal type and are dissimilar from any mature epithelium of the body. This form of new growth is called heterologous growth. Another and later author has called these two classes homomorphic and heteromorphic, or later and better expression is typic and atypic, and after we have said all this and more, we must return to our old clinical classes of benign and malignant. All tumors, both benign and malignant, originate in one of the three primary foetal layers of embryologic development. Farther than this into the embryology of these conditions, I falter to go. The number of tumors have a great bearing on their malignancy. There may be one or many benign growths, and very seldom more than one malignant, and if more than one, it is nearly invariably a secondary tumor, as two primary malignant tumors have been found exceeding rare. It is one of our most trustworthy signs to find metastases in distant parts of the body, for, as said above, benign neoplasms have no tendency to form metastases. When once they are removed they do

not return, and if we remove what we consider an innocent tumor and it returns, we know our diagnosis was at fault, or that we were not complete in our work, but that we left some part of the growth behind.

Glandular infection is another of our most important signs of malignancy and demonstrates their real harmful tendency. However, a tumor may remain localized for a long period of time before the lymph glands are involved, as said above infiltration of the cells of the growth into the surrounding or adjacent tissue is a tendency of all malignant tumors. The cells creep out from the sides of the growth and insinuate themselves into the tissues in which the tumor grows, and you can not definitely tell where the neoplasm ends and the healthy tissue begins. Whereas a benign growth has a definite capsule which separates it from the surrounding structures. Tumor which grows rapidly and which has not a definite limit or demarcation and shows a disposition to adhere to the skin has all the ear-marks of a malignant growth. However, a sarcoma or a carcinoma may grow very slowly for a while, but as time goes on when they begin to grow then these manifest themselves and ere we are aware the growth has run wild and we stand by helpless and say, "if I had known." The color has some significance, for a typic growth will practically be of the color of the tissue from which it sprang. Whereas an atypic growth may be of any color from red, white, black, green or purplish, and a tumor with these variegated colors must be looked upon with suspicion from the very beginning.

EDITORIAL

DR. HARVEY W. WILEY.

After many years of faithful and efficient service in the Department of Agriculture as Chief of the Chemistry and Pure Food Divisions of that Department, Dr. Harvey W. Wiley suddenly handed in his resignation, it is said by the daily press, after an extended interview with Mr. Wilson, Secretary of Agriculture.

Dr. Wiley's resignation brings conflicting emotions to all of those who have followed his work and achievements even in the slightest degree. After many years' patient work he made of his bureaus component parts of the Department that came to be reckoned by the exploiters of impure products as the greatest detriment to their continued existence. Almost single handed, and often with direct and powerful hostility from the officers above him, he brought to a reckoning many of the former frauds of the pure food world and came to be considered as one of the Nation's safeguards.

This work on his part has excited the admiration of all men worthy of the name, irrespective of party on account of its general disinterestedness and impersonality: Without fear or favor he has investigated and run down the various violators of the law; has given clean bills of health where deserved and withheld them where undeserved. In this work he has naturally encountered many enemies and run counter to the wishes and beliefs of some people. In some instances his decisions have met with protest from seemingly respectable sources, but an investigation of these few cases shows one that the differences are more technical and theoretical than practical. Whenever it has been possible for a flaw to be found in his decisions and work, that flaw, even of the most insignificant character, has been pounced upon by his enemies and exploited by hostile press and publicity bureaus to the people of the country as evidence of his fallibility. These bureaus, it appears, have taken their criticism largely from the columns of the different trade food and grocery journals of the country and have sent from their headquarters in Washington Square, New York, skilfully worded and prepared expressions as to Dr. Wiley, his work and their opinions of it to the different publications in the hope that somewhere their propaganda for the purpose of discrediting a good, faithful servant would find fertile soil. In this connection it would be interesting to the people to know just what percentage of his opponents are also opposing the enactment of the National Department of Health Bill into a Law, for it is rumored that Dr. Wiley has stated that his sole attention for a time will be given to the aid of this measure and while this

cannot be verified at this time, the answer would be of interest to the friends of this proposition and to those of Dr. Wiley.

Dr. Wiley has in the last few months come into close touch with every reader of the daily news by his investigation at the hands of Congress, his complete exoneration at the Committee's hands, the approval of the findings by the President and finally the discrediting of his enemies in the Department. This finding has, indeed, reacted severely on the head of Mr. Wilson, and to such an extent that it is extremely doubtful that he will ever recover his lost political prestige.

The resignation of the Chief could not have come at a more opportune time; just after a complete vindication, at a time when he has risen as high as a professional man can in the estimation of his people, and when the eyes of the country are focused on a coming political contest between the great parties, both of whom have declared in substance for the principles advocated by this great man.

No official statement has been made by Dr. Wiley giving reasons for his actions, but those who know him believe that whatever they are they are good and sufficient. The daily press of the country, that is, the respectable element, believe in Wiley and believe that his work will go on and increase in importance to the American people and that eventually the principles for which he stands will become as they should, the cardinal principles of the people, who have a right to demand that their foods and drugs be maintained in purity.

LESSONS FROM OUR EPIDEMIC OF MENINGITIS.

The lull from our attacks of epidemic meningitis has given us time to stop and reflect to some extent on the results of the newer knowledge and application of recently advanced treatments and arrange them in our minds for possible use in the future.

Perhaps there is a clearer knowledge of the affection in the minds of the general practitioner of medicine today in the southwest than anywhere else in the United States, due to his opportunities of observing and treating the cases in his own particular locality and among the more fixed principles involved from a closer observation and deduction may be mentioned many, but only the more important will be noticed here.

The diagnosis may be safely assumed if the spinal fluid is turbid but the absence of turbidity does not necessarily mean that the infection is not present, simply that it probably is not present.

Absence of the meningococcus, microscopically, does not necessarily mean an absence of the infection, for culture of a microscopically clear serum may show the meningococcus.

The administration of serum is imperatively demanded immediately and in no disease may delay in administering this harmless treatment be followed by such complete disaster.

The spinal puncture of Quinke, properly performed, is harmless, or

so nearly so that the dangers may be only remembered; it requires no special skill, but does require rigid asepsis and common sense. If, on making the puncture, the fluid is found turbid, the diagnosis may be safely inferred and the serum given, if the fluid is found clear that is no contra-indication to the use of the serum, it should be given and the further microscopic and cultural tests applied, as should be done in every case, for it is necessary to be able to say that the fluid is progressively showing fewer diplococci in order to give a true prognosis of the condition of the patient.

There is a general belief among the physicians familiar with the use and results of the serum treatment that it should be given in larger doses than is ordinarily recommended by recent writers. Their reasons for this are: That the convalescence is more rapid, a cure more probable, and that the administration of larger doses does not harm the patient. Of course the general idiosyncrasy of some people to horse serums is to be also remembered, but this is so rare as to be almost a negligible quantity. Probably the administration of from 20 to 30 C C in children and from 30 to 60 C C in adults would be nearer an appropriate dose than that now ordinarily used.

The non-use of serum in these cases is inexcusable; while the use of it probably will not be rewarded for a long time with the same brilliant results following the use of serums in other affections so much has been shown in this epidemic that the serum is placed on a safe plane and can no longer be considered as an experiment.

In France the figures of Dopter, taken from the records of 402 cases, show a mortality of only 16.44%, the lowest ever quoted from any source while the total mortality of cases serum treated in 1576 cases was 25. and nine-tenths per cent, as given by ten observers.

Such results as these are not to be carelessly cast aside by the few men in the profession who still have no faith in the serum treatment.

“BRILL'S DISEASE” AND ITS POSSIBLE RELATION TO TYPHUS FEVER.

The attention of the medical profession of the country has recently been called most forcibly to the remarkable coincidences in connection with the experimental work done in attempting to connect Typhus Fever and the so-called Brill's Disease, which latter disease has been prevalent more or less in New York City and was first described by Dr. Nathan E. Brill in a review in 1898 as a disease “clinically resembling typhoid fever, but without the Widal reaction, etc.,” again described in April, 1910, as “An acute infectious disease of unknown origin,” and in August, 1911, “Pathological and experimental data derived from a further study of an acute and infectious disease of unknown origin.”

The Public Health and Marine Hospital Service of the United States, it will be remembered, has recently been doing a vast amount of experi-

mental work in Mexico in attempting to throw some light on the specific cause and general characteristics of typhus fever, and the description by Brill about that time caused the investigators to note the close similarity between the disease as described and the type of Mexican typhus they were considering, with the result that experimental work was undertaken with the view of determining the relationship between the two troubles, if there was any such connection. The results of this work is just being sent to the profession and shows that there is more than an accidental similarity or coincidence in the two affections.

Monkeys previously infected with Brill's disease in New York City could not be inoculated with the Mexican typhus in Mexico, but those free from previous infection were inoculated with typhus, while those monkeys previously infected with typhus could not be inoculated with the infection of Brill.

The pertinency of this to us is the possibility of having a recurrence of typhus fever in the United States. The description of Brill's disease causes one to almost instinctively think of typhus fever and the symptoms of the disease are almost identical with those of typhus. It has been suggested that the mildness of Brill's may be due to the attenuation in some way of the infection or to some unknown factor and that the cases described by Brill were typhus of a mild type and the impossibility of infecting the previously infected monkeys, but its ease in the controls must surely be due to more than a mere accidental set of conditions.

The United States has been rather more than free from such troubles, probably due to better sanitary conditions, for many years; our first outbreak occurred in the New England states in 1812. In 1836 a most deadly epidemic occurred in Philadelphia and in 1893 New York City had 150 cases of the very mild type. The discovery at this time of this similarity above noted leads one to conclude that the possibility of another outbreak is to be considered.

TO COUNTY SECRETARIES.

Your attention is again called to the necessity of having your reports in the hands of the State secretary as soon as possible. Every day your remittance for your county society, giving exact names, initials and addresses, is delayed means confusion and chances of error in making up the annual report to the American Medical Association. This year the correctness of this report at this time is more important than usual as a new directory is undergoing compilation and it is the desire of everyone to have it free from error and misinformation.

The success of the county society depends largely on the business ability of the secretary and his promptness in making his annual collections, and, while you are either not paid at all or very poorly, you should make an effort to inject business methods into your office and have your reports complete and up to the minute so far as your particular society goes.

IDEAL CONDITIONS OF SERUM MANUFACTURE.

If there is one therapeutic agent which, more than another, should be prepared with scrupulous care, that agent is diphtheria antitoxin. Its preparation should never be entrusted to the inexperienced or to those who are hampered by lack of facilities. It should have its origin in the blood of healthy horses—animals whose blood is known to be pure. The welfare of the diphtheritic patient demands a serum from which every element of conjecture is eliminated. In the opinion of many physicians these essentials are best exemplified in the Antiphtheric Serum of Parke, Davis & Co. Certain it is that this antitoxin is manufactured under conditions that are ideal. Miles removed from the smoke and dust of Detroit, hundreds of feet above the river level, the company maintains a large stock farm, aquipped with model stables and supervised by expert veterinarians. Here, in the best possible condition, are kept the horses employed in serum-production. The laboratories in which the antitoxin is prepared, tested and made ready for the market are the admiration of scientific men who visit them.

BOOK REVIEWS

SAUNDERS' NEW CATALOGUE.

W. B. Saunders Company have just issued a new (16th) edition of their Illustrated Catalogue, which describes some forty new books and new editions published by them since the issuance of the former edition.

The books listed in this catalogue cover every subject of interest to the medical man. The descriptions and illustrations are such as to enable the reader to select easily just the book he wishes on any branch. It is really an index to correct medical literature—an index by which the practitioner, the surgeon, and the specialist can acquaint himself with what is new in the literature of his subject.

This edition also contains an illustration and description of Saunders' new building, now being erected on Washington Square, Philadelphia's new publishing center.

Any physician wishing a copy of this handsome catalogue can obtain one free by addressing W. B. Saunders Company, 925 Walnut street, Philadelphia.

Third Annual Report of the OKLAHOMA DEPARTMENT OF HEALTH, Division of Food and Drugs.

For the year ending October 31, 1911.

This report, issued by the State Commissioner of Health, tabulates the work done by the Division of Food and Drugs of the Department of Health of Oklahoma, and also contains digests, opinions and decisions affecting the food and drug conditions of the state. The report shows that an immense amount of work has been done in this respect and that our forces are efficient and effective in this field.

Pellagra.

Pellagra. By George M. Niles, M. D., Professor of Gastro-enterology and Therapeutics in the Atlanta School of Medicine, Atlanta, Georgia. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

The publishers declare that this is the first book on Pellagra written by an American author, and believe that it will fill a much-needed space in American Medical Literature. The work is very well illustrated with the different types of this baffling disease and the Bibliography is very complete.

The history of Pellagra is considered from the earliest time it has been noted, and copious extracts from the writings of other authors is made on the diagnosis, prognosis, symptoms and treatment of the disease.

The author states that European scientists have been concerned with this affection for nearly two centuries and that the proper treatment of it will require much clinical observation, laboratory and special technic, and that the different phases of the disease will require uses of special drugs, baths, waters and electricity and patience and time. With these ends his work is concerned, and the reader who is interested in the subject must conclude that he has handled his subject well.

INTERNATIONAL CLINICS

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1912.

A Quarterly of Illustrated Lectures and especially prepared Original Articles on General Surgical, Medical and Special Topics of interest to the Surgeon, Physician and Specialist.


Edited by Henry W. Cattell, A. M., M. D., Philadelphia, U. S. A., with the collaboration of many American and European authors. Cloth, Price \$2.00 net. J. B. LIPPINCOTT COMPANY, Philadelphia and London.

IODIN IN SMALL-POX.

C. S. Rockhill, Cincinnati (Journal A. M. A., January 27), reports that he has used a 10 per cent. iodine and 90 per cent. glycerin mixture painted over the pustules of small-pox during the past year with very satisfactory results. It dries the pustule, causes absorption of the toxin and arrests the destruction of tissue, thus preventing the usual disfigurement. It has shortened the duration of the hospital stay, from twenty-five or thirty days under the old treatment, to eight to fifteen days. The pustules on the face may be opened with a sterile instrument and touched up with tincture of iodine. Eighty-five patients have been treated by this method within the past year, with 100 per cent. of recoveries and an average stay in the hospital of twelve days.

THE JOURNAL

of the



The seal is circular with a five-pointed star in the center. The star contains a smaller star and the year '1907'. The words 'GREAT SEAL OF THE STATE OF OKLAHOMA' are written around the perimeter of the seal.

Oklahoma State Medical Association.

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MY EXPERIENCE WITH TYPHOID FEVER.

By Walter L. Capshaw, M. D., Norman, Oklahoma.

In the few years I have been in practice I have met with more difficulties, and found more variations in typhoid fever than any other disease. It is not the ordinary phases of the disease that have interested me but those out of the usual, which have been the cause of much thought to me.

Typhoid fever is an infectious disease due to an invasion of the typhoid bacillus of areas of glandular tissue in the small intestine and a consequent inflammatory process with manifest clinical symptoms. As to the specific organism which is the cause of typhoid fever we cannot doubt, but as to its being the only organism to attack these areas and cause the resulting clinical symptoms has given me some reasons to doubt. Further, while I believe that the areas of the small intestine are the first to be invaded I do not believe it is confined here for any length of time, but soon invades the surrounding tissues and rapidly becomes a systemic condition. That much of the intestinal canal, perhaps all, in severe cases, as well as other of the organs of the body, are affected, is my opinion, and that in only very mild cases is the disease confined to this part of the bowel.

Predisposing causes might be spoken of as any which lower the vitality

of the tissues to such a degree as to permit of a more ready invasion by the germ. Among some that I have especially noticed are fatigue following strenuous and repeated exercise to the point of exhaustion. One case which came under my observation followed an attempt at suicide with glacial acetic acid, although the patient had apparently recovered some weeks before, from this condition. I have no doubt the resistance of the tissues had been overcome by the irritation caused by the acid. Another cause is injuries by external violence, especially about the abdomen, an instance being that of a young man injured in a football game by a blow in the right side just below the ribs. Although the disease did not set up for some time after the injury the evidence of the severity of the condition was more manifest in that area. Numerous other instances of specific predisposing causes might be mentioned but I speak of these because of the uncertainty they would cause and the delay they would be likely to bring against a diagnosis of typhoid fever.

There may be no prodromal symptoms but usually some history of various disturbances can be elicited. Generally there is malaise, capricious appetite, a tendency to constipation, more or less gastric uneasiness, such as heaviness in the stomach, and some tenderness or pain. Headache accompanies this indisposition, becoming more persistent and severe as the disease develops. As stated above there may be no preceding symptoms, the patient feeling well up to the onset of the illness. In the majority of cases, however, it is my opinion that the prodromes are present.

The onset is, in most cases, gradual, but I have seen a few cases that began suddenly with distinct chill, or gastric disturbances such as vomiting or cramping following heavy eating. The patient has taken to his bed and the physician sent for. Inquiry as to history during the preceding weeks or days usually elicits some of the prodromal symptoms. The patient complains of languor, feverishness, and headache. The tongue is coated, breath bad, pulsations accelerated, and the thermometer registers two or three degrees of fever. The skin is slightly yellowish, dry and hot. The bowels may be constipated or in a state of decided activity. The former is the more frequent in the beginning, I think, followed by the latter. I do not think vomiting is common but there is a decided tendency for the stomach to reject any content if disturbed. The abdomen may be slightly distended, but I have not found it markedly so in the early stages of the disease. Not being confident of a diagnosis at this time, I give a mild calomel purge and await the developments of the next day. I have given quinine as an aid to diagnosis, but now I take a blood smear and examine for malaria instead, also try a Widal, which is not generally positive at this time. The following day, symptoms being about the same or slightly exaggerated, I think of typhoid fever, make more blood tests and institute a routine treatment. I have not infrequently found the symptoms to subside following the purge, the patient to feel much better, and often be up and around, thus obscuring or delaying a diagnosis. Following this remission of symptoms they usually return with increasing severity and continue more or less

typical. In the course of a few days nosebleed may occur and I am more confident of my diagnosis.

At this time I begin to look for a source of infection as an aid to diagnosis. The drinking water is first thought, followed by the milk and other foods. Having the State Board of Health laboratories at hand, samples of water and milk are examined. If either is contaminated, confidence in my diagnosis becomes still stronger. I have found drinking water from shallow wells during dry seasons as the most frequent source of infection, followed by cisterns, and milk in order. I am generally satisfied of my diagnosis in four or five days but not always sure. I do not wish to speak so much of the typical findings as the atypical. The temperature in my observations has varied considerably. I have seen two or three cases in which the temperature was at its height in two or three days, perhaps because the patient had been able to keep going during the earlier stages. The fever in the beginning frequently subsides following clearing of the intestinal tract, and may be normal for several hours or a day or two. The slight morning decreases I have known to be absent, the evening temperature being occasionally less than the morning, or the temperature may take an unexpected drop at various times. The one febrile phenomena that has caused me more concern than any other is the rise in temperature, without apparent cause, following the return to normal in three or four weeks. One instance out of the ordinary in the temperature curve, in a patient under my observation was the sudden dropping below normal during the second week, accompanied by severe gastric and nervous manifestations, and continuing for a period of more than two weeks, during which time the temperature could not be raised above 100 and frequently was as low as 96. A chronic temperature extending over a period of more than five months in one case even after the patient had been up and around for several weeks, and gaining weight and strength constantly. Other symptoms I shall take up and speak of under treatment.

The treatment of typhoid fever offers a broader range for difference, perhaps, than any other phase, and offers more chance of exercising good judgment. In the beginning, as previously stated, I give a calomel purge, followed by a saline. For the temperature, when it has become such as to require attention, I give frequent warm or cold baths, as my patient will allow, followed by an alcohol rub. I am opposed to insisting upon a routine of cold baths. Cold applications to the head generally will relieve the headache. In some cases I use Aspirin for both temperature and headache, and have been well pleased with the results, as I have not found it very depressing in moderate doses and certainly not so much so as other antipyretics. I have occasionally, in exceptional instances of high and persistent temperature, used a few drops of guaiacol externally over the abdomen with good results. My patient is put upon an absolute liquid diet, in the beginning, usually buttermilk, artificially prepared if possible, and if not altogether disagreeable I make it the sole source of nourishment for the

first two or three weeks. I do not like sweet milk or broths as I believe they facilitate the growth of the bacteria, and in many instances aggravate the gastro-intestinal symptoms. In the declining stages of the fever I allow some variety of diet, avoiding, however, anything having a tendency to ready fermentation. After the temperature has subsided I gradually increase the diet, unless there is a tendency to increase in temperature. If, after several weeks, the temperature persists and is not excessive I begin to feed my patients just the same, gradually increasing even though the temperature be temporarily accelerated. I have found that there is oftentimes a tendency for the temperature to become chronic, especially the afternoon, and that the diet does not materially influence it.

It is not my practice to use purgatives after the first few days as the bowels are usually sufficiently active, but I do use gentle colonic irrigations of sterile water or normal salt solution. After the first few weeks of the disease if the bowels have a tendency to sluggishness, I again use mild purgatives, sometimes active ones, as I believe it is oftentimes an auto-intoxication that causes the temperature to persist. Abdominal distention from fermentation gases can often be relieved by a tube inserted into the rectum. Irrigations also relieve this condition.

Specific treatment I have left to the last because I am not satisfied that there is any of special proven value. I have tried most all of the so-called intestinal antiseptics, and cannot say definitely that any give marked success. Tincture of iodine and resorcin in a liquid solvent are my favorites. I do not stimulate my patient at any time unless conditions demand it, as I believe stimulants in the subsiding stage have a tendency to prolong the temperature.

Complications I have no desire to speak of except to say that coming up at unexpected times they are decidedly worrying to the young physician not only because of their seriousness, but also because of explanations sought by the patient's friends. I have an experience of one case in which perforation occurred in the first week, another of hemorrhage in the same period, and the people being previously informed that such complications were not likely to appear for some time, explanations were difficult. Another instance of hemorrhage early was found to be caused from piles.

I thank you very kindly for your courteous consideration of my paper, and in closing I wish to say that I have had occasion in more than one instance to thank older ones in the profession for their kind consideration and assistance, which has helped me to learn and observe more than in any other way the practical side of medicine.

Discussion.

DR. A. K. WEST: Typhoid fever always interests a man practicing medicine. Like the poor, we have it with us always. To begin with, I am glad Dr. Capshaw told us he was a young man and was timid. By his

looks I judged he was an old war horse. I don't take much stock in that.

The subject of the paper and points to which the doctor calls attention, the difficulties, are those that older men have just as well as do our boys—as he purports to be.

There is just one thing I want to call attention to and that is with reference to the typhoid bacilli. I am persuaded in the last few years we are, as a medical profession, not staying in the strict bounds that the scientist should keep himself. We have no right to say a thing is so as long as there is a doubt that it is so. The evidence is preponderating that the specific germs cause the specific disease. However, it has never been made to conform to Cope's law in the past. There is no evidence so far as I know, no experimental evidence, that it will always reproduce itself. There are a few things which I think the medical man might well take into consideration and, if you will allow me, this is not discussing strictly the subject matter of the paper. I want to call attention to the experiments of Dr. L—— in the City of Washington, which have a marked bearing on the disease. After a most careful and painstaking study of the disease giving about a year to the study, he made this report, that since Washington had spent about a million and a half dollars in purifying its water supply in the City of Washington, the typhoid epidemic, instead of being less in the following year, was greater; thus contradicting the experiment of the city of Philadelphia. Studying the fly as a means of scattering typhoid, Dr. L—— found that there was no relationship existing between the open privy and the houses that were protected from the typhoid fly and those that were protected under the best system. Likewise he reports that there was no relationship existing between the fly frequency period and the typhoid frequency period. He gave it as his belief that a certain number of cases might be traced to the milk supply. That a certain number of cases could be traced to individuals on a summer vacation that brought the infection back with them. In the City of Washington it has been proven that there is a means of dissemination of which we are absolutely unaware. I believe unquestionably that we must get on the plane of pure science and when we state a thing dogmatically there must not be any mistake. As before stated, I have no objection to swatting the fly, but I have no patience with the widespread theory of the newspapers that the fly is the cause of the epidemic. Gentlemen, we ought to be careful about that. I have more than taken up the time, I beg your pardon.

DR. LEEDS: I enjoyed Dr. Capshaw's paper very much. It was an unusual one in a good many respects. Ordinarily we don't hear a paper in which the paper tells of the difficulties that the doctor has in treating a certain condition. Ordinarily he usually brings forth the successful features. His paper also showed me that he was very observing in all of the different conditions which might develop and I, too, am beginning to believe one of two things, that either the so-called typhoid state in Oklahoma is different from other places or there are a great many cases of fever which does not

resemble a true case of typhoid fever. I mean in all of the particulars. For instance, we have a good many cases of fever that run practically the same number of days and have a good many of the symptoms but they do not seem to be as severe. Do not seem to affect the patient in the same way. And I believe that if we, as physicians, in the treatment of a condition that we suspicion may develop, if we would begin to increase the fighting powers of the system we would do more good, save more patients and have fewer complications in the true typhoid than making the diagnosis and then shooting a routine treatment at a patient.

The different conditions surrounding these cases has led me to believe along the same line with Dr. West, that at the present time we haven't reached an explanation or the source of this trouble. I have had cases that were typical of true typhoid, the blood tests and all the tests would show very clearly that it was a true case, but an examination of the water and milk supply, and in fact, an examination of almost everything you could get your hands on to examine—and one case in particular that I remember in which the family was extremely anxious about the trouble. I did the fly-swatting act, and not only examined the fly myself, but sent some of the flies off to be examined, and I couldn't find anything in the neighborhood, or even in the town, that would justify me in saying that this condition had come from any water, milk or any other visible source. So for that reason I believe we ought to be careful about exciting our families about those things unless we are absolutely sure; unless we are absolutely positive about the condition well enough to make these examinations and to satisfy the family.

And then another point that the doctor brought out in his paper—and I want to emphasize this—is that whenever we have a case of fever, however slight, we owe it to ourselves as physicians to not make any statement what is going to happen within twenty-four hours, because, as the doctor says, we are going to be badly surprised and it is going to hurt us, too.

DR. WEST (Guthrie): I feel some hesitancy as I am a brother out of the practice, but not long ago my attention was called to something that interested me very much. I am sorry Dr. Cleverdon is not here to report the case. This occurred in one of the state schools where they had a siege of typhoid fever. They had twenty-three or twenty-four cases. They treated eleven of them by the typhoid serum and in that number of cases there were no relapses whatever; and in the other cases they did not treat with the serum all but one of them had from two to three relapses. I haven't treated any of these cases myself but that appeared to be an experiment in favor of using the typhoid serum.

DR. FISHMAN (Oklahoma City): I want to say a few words regarding the early diagnosis of typhoid. These are simple methods that can be used by all physicians and therefore are of interest in a general community.

One of them is the early finding of a positive Diazo in the urine. That comes almost before the Widal. It isn't specific, but helps a good deal in the early diagnosis at a time when the medical man and his patient and family want to know what is the matter.

DR. MARSHALL: What results have they gotten, if any, from the use of this serum? I would like to know if any of the doctors here have used the serum and what were the results.

DR. LEEDS: I used it in four cases; hardly enough to make a positive or definite statement but in those four cases I had the same condition that I have had with other treatment. There were no relapses, but whether you could absolutely put it down as due to the serum or not I am not in a position to say right now.

CHAIRMAN SCOTT: Anybody else? If not, Dr. Capshaw may close.

DR. CAPSHAW, closing: I appreciate very highly the compliment the other doctors have made on my paper. I don't know whether Dr. West understood me or whether I didn't understand him in regard to the typhoid germ as being the cause of typhoid fever. The typhoid bacillus undoubtedly can cause a condition known as typhoid fever, which is typhoid fever, but the point I intended to bring out was that we might have other fevers, other conditions which were very similar to typhoid and yet caused possibly by some other germ. For instance, I think most practitioners will agree that it is not a very easy proposition to isolate typhoid germs from some of the other bacteria. I believe, like Dr. West, that if we could be sure that nothing but typhoid germs cause typhoid fever, or caused conditions that for the purpose of explaining ourselves to the people in general must be called typhoid fever, that it would be a good thing. But I have had cases, one or two, in which, although almost every indication pointed to typhoid fever. One instance in particular that I remember was a case in which the person was taken sick shortly following the eating of a lunch and included in this lunch was a certain kind of cheese. The symptoms began with vomiting and with cramping, with very little temperature at first, although more later, resembling typhoid. And following these symptoms the patient had considerable trouble with the bowels; but after some four or five or six days the passage of this indigested cheese relieved the condition very remarkably, in fact, to such an extent that the temperature became normal. The patient in every way showed indications as though the entrance of this material had caused an irritation of the intestinal tract. Later after two or three days the temperature came back. The symptoms became stronger. The Widal was present so that evidently the case was typhoid, but the proposition that bothered me is how we can make a diagnosis of typhoid fever under conditions of that kind. I have had numbers of cases in which I hesitated to make a diagnosis of typhoid fever because

I thought I knew or could think of other conditions that were causing the trouble besides typhoid.

You remember that I mentioned in my paper one instance of typhoid fever following an injury. This case I think almost every doctor in Oklahoma City, several doctors in Guthrie and from various other towns over the state saw. The proposition that most interested us was what the trouble with this boy was. He was injured in a foot ball game. He had received a blow in the right side and was confined to his bed only just a short time—only a day or two, until he was able to be up and around and feeling much better. In about two or three weeks he gradually began to come down with a condition resembling typhoid fever with the exception that he had unusual tenderness or pain in the region of his injury. We had a blood examination made and we got the Widal. The symptoms in every way indicated typhoid with the exception that the condition of that side where the injury had been received was such that we couldn't help but believe that the blow was the cause of the trouble and not typhoid fever. We began to look around for a source from which he might get typhoid, and finally we found that a certain well that he had been using water from was contaminated with typhoid. This case ran quite an extensive course extending over a period of five months. And during that time the condition of the side became such that the patient was absolutely drawn to one side. Always protecting that one particular side. We thought of almost everything, abscess and everything of that sort and absolutely we could determine nothing but that it was typhoid fever.

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THE ETIOLOGY, PATHOLOGY AND TREATMENT OF INFANTILE PARALYSIS.

Dr. Leila E. Andrews, Oklahoma City.

Bacteriologists who have done most of the work in the study of epidemic poliomyelitis, believe that Scandanavia was the focus of contagion in our first outbreak of this disease in 1907. For almost two decades laboratory men of Norway and Sweden have believed their country to be the endemic focus from which many European epidemics have sprung. They have found, also, that the contagion can be carried by intermediate persons from the stricken to the healthy—and not only from individuals frankly paralyzed, but from those suffering from the mild or abortive type as well. They have also found the incubation period to be quite variable—from 2 or 3 days to 20 or 30 days.

These features in the behavior of the disease help us to trace our first great epidemic which swept along the Atlantic coast from two foci—namely, Greater New York and Boston—the landing places of most of the immigrants from Norway and Sweden.

We are not surprised then, when the Middle West is visited by another epidemic in 1909, that Minnesota, which receives a great influx of population from Norway and Sweden, should be the center of the epidemic.

The virus has not been isolated. It is believed by Flexner and Lewis, of our own country, and by others from abroad, that this virus is of the smallest type of the so-called filterable virus known to cause infectious diseases in man and the lower animals. The behavior of the virus is very interesting. An emulsion of spinal cord from a child dying with the disease did not produce the disease in the ordinary animals used in the Flexner laboratories, but when inoculated into the brains of monkeys by trephining, after a few days, when the monkey seemed perfectly normal, a paralysis developed. The spinal cord from these animals was employed to transmit the infection to still other monkeys. In these monkeys there were noted the same variations as to incubation period, as in man, namely—from 3 or 4 days to 33 days, the average being 8 or 9 days, as in man. The prodromal symptoms consisted of a state of undue nervousness and excitability. These symptoms being most marked for a period of 6 or 8 hours before the onset of paralysis, which was as a rule, sudden. The animals showed no constant preceding rise in temperature, and no gastro-intestinal symptoms. They showed that the paralysis affecting any of the larger groups of voluntary muscles was likely to be accompanied by weak or partially paralyzed groups of muscles. Sometimes the medulla showed the first invol-

ment—death often occurring before paralysis. The lower and upper extremities were more often the seat of damage than the muscles of the trunk. The results, then, from the Flexner laboratories, show a striking similarity between the frank examples of Epidemic Poliomyelitis, whether occurring sporadically in man, or experimentally in monkeys.

As to Pathology—To the naked eye there is congestion and hemorrhage into the gray matter of the cord and medulla, chiefly, but not exclusively, confined to the anterior horns of the cord. Microscopic examination shows the lesions to be more severe in the spinal cord than in the brain and greater in the gray matter and membranes than in the white, although all parts of both cord and medulla are involved.

The meninges show a more or less diffuse round cell infiltration, especially pronounced around the blood vessels—and involving the adventitial coat leaving the muscular coat and intima intact. By compression from without, the lumina of the vessels become altered both in shape and consequently in function. This same characteristic—of cellular infiltration is present in the gray matter of the cord and chiefly in the anterior horns. Now, in as much as our chief involvement of tissue is in the adventitial coats and the perivascular lymph sheaths of the arteries, we naturally expect the most involvement of gray tissue to be in the locations most rich in arterial blood supply. This, then, explains the large percentage of cases with greatest damage at the lumbar and cervical enlargements of the cord. The nerve cells and ground substance by the oedema from this round cell infiltration suffer degeneration which if continued, results in necrosis. The degree varies with the degree of vascular involvement. These pathological findings explain also the various degrees of paralysis. When the lumina of the little arteries are relieved of the compression around them, by the absorption of the round cell infiltration, circulation is again established and the paralysis gradually disappears. But when the damage to the nerve cells has been so severe that necrosis has taken place, the cell activity can not again be established, hence the paralysis resulting is permanent.

There is a great degree of similarity in behavior of the virus causing infantile paralysis and the diplococcus intracellularis causing epidemic cerebro spinal meningitis. They both seem to choose in man the mucus membrane of the naso-pharynx as favorite site of entrance into the body. It is believed, although not proven, that it acts also as a place of exit for both the germs causing these diseases, the connection between the nervous tissue and the naso-pharynx being by means of the lymphatics.

The treatment of epidemic poliomyelitis is at present symptomatic. During the acute stage it is necessary to isolate the patient and establish quarantine. The paths of elimination of the body should be freely opened, namely, the bowels, kidneys and skin. The use of the ice bag both to the spine and the head is good treatment. The measures used to combat any toxæmia should be used in these cases.

As to treatment of the paralysis—A certain number of cases will improve rapidly—those of course where the normal vascularity can be regained. Those where necrosis of cells has occurred, the treatment offers to the painstaking and careful surgeon or general practitioner for that matter—fairly good results. It must be borne in mind that the absolutely normal use cannot be attained, but by various means it is possible to establish certain conditions which will improve the form in the deformed cases and improve the function in the non-deformed. These cases rightfully belong to the orthopedist.

It is our duty if we are not able to thoroughly understand the pathology of any given case to place the case in some competent orthopedist's hands, for many unsightly deformities can be prevented and many useless limbs can be, with correct care, made to functionate even though feebly.

I have freely used in this paper the reports of Dr. Flexner, from his laboratory, for I believe it is to his untiring energy that we are in a measure able to understand the etiology, if not yet—the exact entity of the virus, and appreciate the pathological course of this interesting and deplorable disease.

PRACTICAL OBSTETRICS IN COUNTRY PRACTICE.

Dr. F. R. Wheeler, Manford, Oklahoma.

By practical obstetrics we mean that which is common to the average physician. Not the Caesarean section, extra uterine pregnancy, etc., as we saw yesterday by the announcement in the Journal that these and similar subjects will be dealt with by others. But what we will say to you will be that which you may meet on your arrival home, which happened to me last year when I alighted from the train after attending the Tulsa meeting. I found a man waiting for me to go at once to his house as he said his wife was having fits. No one knows when he may be called for in confinement cases, hence he should have his working tools ready, neglecting nothing as he may need such articles as he did not take with him. And when called go at once as you may be needed badly even before you shall have started. By way of parenthesis I will say to those who have to drive out into the country of dark nights you will find the acetyline or gas light superior to all others. I attach it to a light piece of wood like a long broom handle which sets in a socket attached to the front of buggy bed below the dash board. The light is high and shines out over your team and you have no night terrors. Excuse the digression, brothers, but this is part of practical obstetrics in the country.

When you arrive at the bedside you may and you may not have time to make the toilet and aseptic conditions you find advised in the books. Theoretically we are horrified at things we have to put up with at times. I find but little difficulty in convincing husband or neighbor, or whoever may attend, of the importance of rather more than ordinary cleanliness. Beyond that they do not seem to understand. Yet they will respect all you do however mystifying it seems to them. And we can in a measure be next to Godliness, at least, if we are clean we can have a clear conscience. Before making the first examination and as soon as the regularity of the pains decides one that the patient is in actual labor, she is to be placed in the dorsal position on a bed or if allowed preferably on a table, with or with a Kelly pad under her hips. Conditions permitting, you will have ascertained the history of the case, that if the time of the expected confinement is up, her age, number of confinements if any, condition of bladder, if the bowel is full, etc. If the latter condition exists, have nurse to give copious enema.

After you have made an examination make a positive assertion to the patient and friends that all is well and that it is only a matter of time. If something is wrong quietly but privately inform the husband but do not worry the patient as she has all now that she is able to bear. It is our

province to help but not to hinder or worry. If the patient is very nervous and if her friends appear to be uneasy about the result give her the chloral compound of chloral, bromide of potash, cannabis indica and hyoseya-cannabis indica acts like ergot or quinine in stimulating contractions. I have never observed any cessation of the pains from the chloral compound. And by its use you not only quiet the patient but in an indirect way all those around you.

The patient will often ask how long it will be before she is through. Do not state a time as you will find often that it is to your sorrow. If the os uteri is soft and yielding there is nothing to be done beyond the necessary preparations in all such cases. But you had better get busy and be at work in some way for the patient will never forgive you if you fail to impress on her mind that you are trying to mitigate her suffering. Have all parties doing something. Get one of the grandmas to prepare a cloth warmed to wrap the baby in, and keep all busy as you will then convey the idea to them that you know exactly how to manage such cases which to them is very important. You will be asked if pulling of the patient's hands and various other procedure will not hasten the patient's recovery. And you will not know always how to reply if you do not keep abreast of the then existing conditions. I have tried many of the fanciful ideas of the old multiparas and do not know that any is best in all cases. Perhaps the dorsal position and the old fashioned pulling of the hands will be as good as any, if not you will have satisfied the fastidious.

Among other local measures I have found that cloths wrung from very hot water and applied to the perineum will not only give ease of pain but will help to soften these parts. In fact hot applications and time are the best perineum stretcher. About this time you will think of the woman's greatest friend—chloroform. There is nothing so good. Do not be afraid of it. I generally have my patient under the chloral compound so that it will not be necessary to give much chloroform. But right here is where we can be of help to our patient. And we should not be afraid to use both the chloroform and the forceps. Certainly we are the woman's friend and she of a right expects us to help her to bear her sufferings. If the attendants object to the use of chloroform I refer them to the Holy Writ. I tell them that God used choloform to help the only man that history gives any record of being confined to bear his pains for it says that Adam was asleep when Eve came to this country. I have as yet to meet the time when I regretted using chloroform and many is the patient who will send for me in preference to other doctors for they know I will use chloroform, which is one of the best treatments of that dreaded condition eclampsia which we will not dwell on here as Dr. Howard will, I suppose, cover that ground.

Your attention will now be called to help to direct the passage of the baby, and you should direct but not force as you may have a lacerated perineum as a result.

Do not be in a hurry to separate the child from the mother as some will say you did not let it get blood enough, though it is not believed that the child would get one drop of blood by such measure. Be sure that the tie of the cord is firm. As to ligating the placental end of the cord there is nothing to be gained unless, if there should be a hemorrhage follow, when some ignorant one might say that the mother bled through the afterbirth and you will have to bear the blame. Do not be in a hurry either about the completion of the third stage. It is well to give the ergot as the head nears delivery, as it may set up contractions that help to expel the afterbirth and also may prevent a hemorrhage. And if the afterbirth is very slow in being removed knead the abdomen well over the womb. I find no bad result from moderate traction of the cord. After the completion of the third stage ascertain if the womb has contracted say the size and shape of a cricket ball. If so all is well so far, if not look out for hemorrhage and grasp the womb again and hold it while an attendant gives a hypodermic of ergotole and nitroglycerine. If this does not stop the flow proceed with the usual acetic or other acid as astringents by the packing method. As a rule I give my patient three or four doses of quinine a day till the milk has appeared. See that her bowels have moved well the second or third day and that she commits no excesses. If in a day or two you are called to see your case who has high fever not due to lactation do the cleaning act, clean out the bowels, the kidneys and by no means the least of all clean out the womb. But as others will no doubt touch on this point I will desist.

This is all very nice on paper you may say but what of the abnormal presentations? We all have them and I confess I am so dull I cannot understand the text books, or it may be that everything comes around about right to me, as I cannot use all I read when I meet such, but I try to use common sense and not get in a hurry or excited. If a hand or a foot presents I chloroform, turn and deliver. We have all listened to the old professors and read the authorities but here you must decide and act for yourself. Here is where the busy bodies know nothing and you must know what to do. So do not lose your head. Nothing new in this paper, perhaps, it is the same old story of being careful and ready for any and all emergencies. But as the writer has never witnessed the death of a woman as result of confinement, and he believes that he has the average number of cases, he feels that what he has said is practicable if not scientific, and would you not rather save your patient by these simple procedures than to kill them scientifically?

We always feel that we are in a very responsible place and ask ourselves what would we do if it were our own wife. Often when tempted to hasten the delivery by the use of the forceps we hesitate, and think by the forceps like we do of the low neck and short sleeve dresses—that is they look best on the other man's wife. We always do our best, and we feel that "Angels could do no more."

THE TREATMENT OF MENINGITIS.

By Dr. A. C. Hirshfield, Norman, Oklahoma.

As this paper must include the treatment of the different forms of Meningitis, I shall for the convenience in handling, divide them into three classes, viz., (1) Epidemic or the common Cerebro-Spinal Meningitis; (2) Tuberculous; (3) All other forms including influenzal, streptococic, syphilitic, acute and chronic, et cetera. Now for the sake of emphasis, I shall reverse the order given above, considering epidemic cerebro-spinal meningitis, the form we know the most about and for which we can do the most, last.

The treatment for all cases may be divided into prophylactic, specific, generally symptomatic and hygienic treatment, and last but not least lumbar puncture. There is also a further surgical treatment, which has so few advocates, that I shall only mention it in passing. In so much as so little is known of the mode of entry of the various organisms causing meningitis, all forms except syphilitic of course, should be treated as contagious diseases, and especially is this true of the epidemic form.

Of the forms of meningitis classed in the general group, the pneumococic is probably the commonest. If an accurate diagnosis can be made by a lumbar puncture, the general treatment should be supplemented by the introduction into the sub-dural canal of anti-pneumococic serum, first drawing off an equivalent amount of cerebro-spinal fluid. In the introduction of a fluid in the cerebro-spinal canal it must be remembered that we are dealing with a closed canal in an organ surrounded by a nondistensible bony covering, and any substance introduced must make room for itself by either diminishing the blood supply so much, or compressing the brain or cord substance. Lumbar puncture also serves another purpose, that of removing a certain amount of fluid loaded with toxins, and possibly microorganisms. Kleinschmitt in reporting a number of cases of pneumococic meningitis states that they are usually fatal. He reports one case which recovered. The factors of treatment in this case were hexamethylenamin, lumbar puncture and pneumococic serum. I think that it will be observed as we proceed, that all cases of meningitis reported as recovered were given the benefit of decompression by lumbar puncture.

Another not infrequent form is the influenzal variety. In this variety we have only the lumbar puncture, and hexamethylenamin to use with any encouraging promises. Searching the literature, I found one rather suggestive case, pointing to the possibility of good in these measures. It was a case in which permanent drainage was attempted by leaving the Lumbar needle in situ. After this procedure the temperature dropped to normal

and remained normal for twenty-four hours with a corresponding general improvement. At this juncture, however, the needle become dislodged and could not be reintroduced. While this case died, the incident just related lead the writer to observe that "The combination of permanent drainage and hexamethylenamin treatment may be of value in those cases without a specific treatment. As a further argument for lumbar puncture in all cases, I might quote an extremist on the subject. This is Haltgar, who in the American Journal of the Medical Sciences, says that he is, "Inclined to believe that the mechanical effects of the excessive intracranial pressure are more damaging than the infection." Before leaving the subject of influenzal meningitis, I am happy to report that Flexner is now perfecting a serum for this form, produced by the same exact scientific method that gave us the antimeningitis serum. It has already rescued animals from the throes of agony and near death from influenza, meningitis artificially produced, and is now being tried by a few clinicians. Basker reports three cases of meningitis following measles. In all these improvement followed and seemed to be due to lumbar puncture. One case recovered, though it was not bacteriologically proven meningitis, as the fluid was clear, and contained no organism.

For a streptococcic meningitis the treatment is the same with the addition of the anti-streptococcic serum, generously administered.

For syphilitic inflammations the treatment is obviously anti-syphilitic, including in select cases salvarsan. Linzenmeier reports one interesting case of meningitis following spinal anaesthesia. As a positive Wasserman was obtained, salvarsan was administered and the disease promptly subsided.

Tuberculous Meningitis.

Few diseases are more disastrous in their results than tuberculous meningitis. Holt estimates that except during the occurrence of epidemic cerebro-spinal meningitis, 75 per cent of the deaths from acute meningitis in children are caused by tuberculous meningitis. The prophylactic treatment of this disease demands that all children should be absolutely separated from every individual suffering from pulmonary tuberculosis. The treatment of this disease can not be undertaken with any expectation of a cure. If a positive diagnosis is correctly made, practically no hope can be held out to the parents from any treatment. Archangelsky finds on record only five cases of tuberculous meningitis which recovered, to which he adds one of his own. In his case, repeated lumbar puncture supplemented by sodium iodid was a factor in the cure. It was for a time thought that operative treatment offered some hope in these cases, but this has been dissipated by repeated failures. Cleveland reports four cases upon which he operated, draining the posterior fossa, in one case, tapping the lateral ventricles in two, and combining the two procedures in the last case. He lost

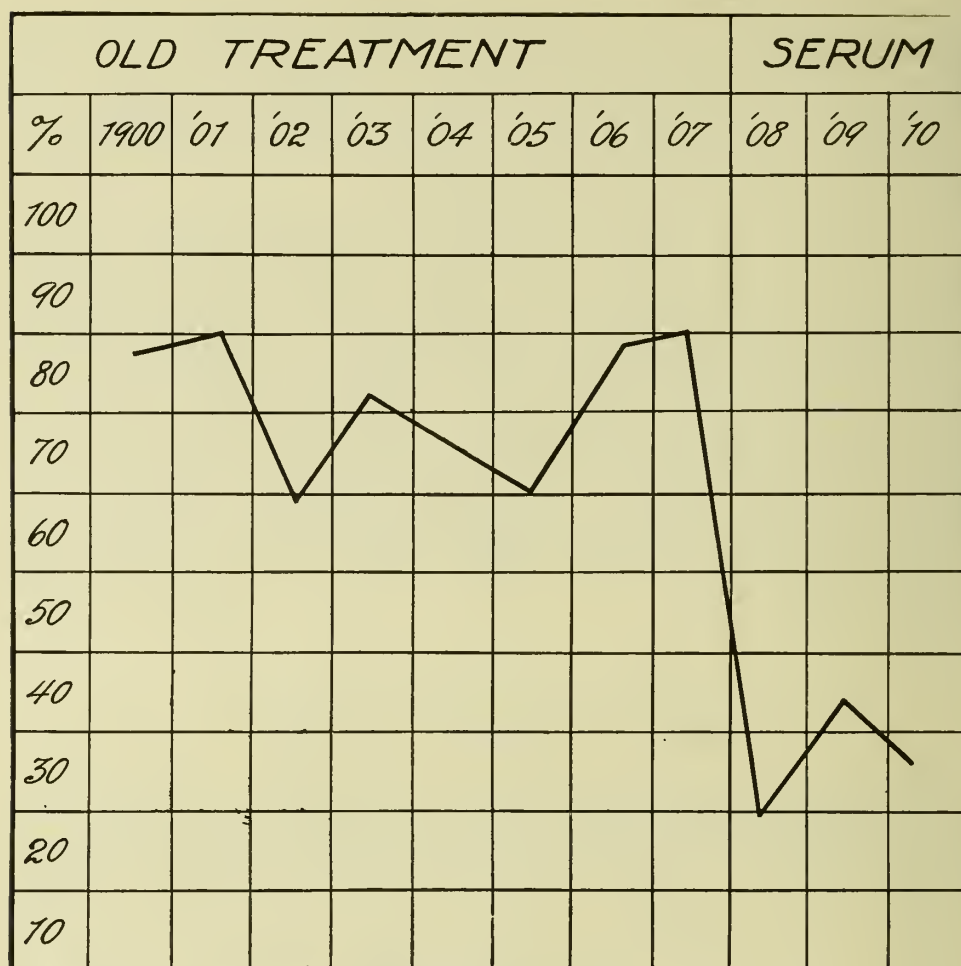
all four cases and concluded that surgical interference is useless. While the subject of brain tumors is yet fresh in our memory, I should like to mention one case of chronic tuberculous meningitis, reported by Strasman. This was a case of three years duration in a man thirty-eight years old. It was diagnosed and operated for a case of cerebral tumor, with a fatal result, a correct diagnosis being made only at necropsy.

Symptomatic and hygienic treatment will of course be followed out in these cases even though the hope is slight. External applications of ice, and possibly counter irritant measures may be used. If there is restlessness or muscular twitching the bromids are indicated. After the first week the iodide of soda may be administered with the hope, (generally a vain one) of removing the products of inflammation at the base of the brain. Lumbar puncture should be resorted to as long as there are any returns from the same. And insomuch as hexamethylenamin is rather rapidly excreted into the cerebrospinal fluid, it may be given, though it can hardly be expected to influence a tuberculous process. So much for the treatment of tuberculous meningitis, the chief part of which is to keep the patient comfortable until he dies.

Epidemic Cerebro-Spinal Meningitis.

This disease caused by the diplococcus intracellularis of Weichselbaum, is the one which is most rapidly fatal, unless the course is modified by the specific treatment. The development of the curative serum for this disease is one of the crowning achievements of modern medical science, and stands out as one of the important events of all medical history. This one success alone would more than repay for all the animals sacrificed in vivisection, which is so strenuously opposed even in the city where this cure was developed. How can any human being compare the saving of one child to the suffering or death of all the monkeys in Africa?

Flexner and Jobling report 712 cases treated by the serum in which the diagnosis was made by accurate bacteriological findings. In this series a gross mortality of 31.4 per cent was obtained. As we all know, this disease without the serum treatment has always shown a mortality of from 80 to 100 per cent. Thirty-one per cent is especially low when it is remembered that this includes all ages and cases in which the serum was commenced at different periods of the disease, from the first day to the last. In those cases in which the serum is administered in the first three days the mortality is only from 7 to 15 per cent. Prof. Netter of Paris reports 14 cases, all above ten years of age treated with the serum and in which the mortality was zero. A graphic illustration of the improvement in the mortality of this disease since the use of the serum treatment is shown in the accompanying chart, of the disease at the Boston Children Hospital for ten



years. (Copied from Charles Hunter Dunn.) It will be seen that before the use of the serum the mortality ranged from 60 to 80 per cent and after the serum treatment from 20 to 30 per cent. Besides the effect on the mortality rate, the immediate influence of this treatment upon the symptoms is very striking. Dunn states that, "It oftener happened that within twenty-four hours there was a permanent return to consciousness, disappearance of the mental dullness, relief of the hyperesthesia, and control of the vomiting, all very distressing symptoms that accompany severe infection.

The method of introduction of this serum is comparatively simple. A lumbar puncture is made at a point level with the highest point of the ilium, and from one to two ounces of cerebro-spinal fluid withdrawn. This is replaced by the injection of an equal amount of the serum. An ordinary large sized hypodermic needle suffices very nicely for this purpose in children. This should be repeated daily until the temperature is normal. The earlier this treatment is instituted the better the chances of a cure. Joeh-

mann states that the success of this treatment depends on commencing it early. He aids the injection by raising the foot of the bed 15 to 20 cm, for twelve hours after each injection. Usually this causes little or no pain, but occasionally a little morphine will be needed afterwards. He reports excellent results, even having two cases of commencing optic neuritis retrogress after the injection of the serum. A typical case of epidemic cerebro-spinal meningitis so treated is the one reported by Snider and Tyndale of Salt Lake City. This was a severe case in a boy twelve years old, which was not seen until the fourth day. The treatment consisted of four daily injections of 30 C C of Mulford anti-meningitis serum, after the removal of cerebro-spinal fluid. A speedy and complete recovery followed.

Since this treatment is practically specific for this form of meningitis, the other treatments will not be detailed. Needless to say a general symptomatic and hygienic regimen must be enforced. In cases where it is impossible to obtain the serum, the hexamethylenamin treatment, and lumbar drainage should be persisted in to the end. Lumbar puncture is really a simple procedure, and if done under aseptic conditions is devoid of danger. A coating of tincture of iodine is the best method of sterilizing the skin.

Insomuch as the serum treatment of cerebro-spinal meningitis is the thing worth while in this whole paper, I deem it fitting to conclude by quoting from Dr. Flexner that, "In view of the various considerations presented, the conclusion may be drawn that the anti-meningitis serum, when used by the sub-dural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness, of preventing in large measure, the chronic lesions and types of infection; of bringing about complete restoration of health, in all but a very small number of the recovered, thus lessening the serious, deforming and permanent consequences of meningitis; and of greatly diminishing the fatalities due to the disease."

SERUM THERAPY OF CEREBRO-SPINAL MENINGITIS.

Read Before the Jackson County Medical Society, Altus, Oklahoma, February 5, 1912, by S. H. Landrum, M. D.

I shall spare the gentlemen of this society the usual tedious routine of history, etiology, symptomatology, pathology, morbid anatomy and diagnosis, and touch merely upon such points as are not generally taken account of in the ordinary discussion of that infection known as epidemic cerebro-spinal meningitis. In view of the present real seriousness of the situation in Texas, and of the thoroughness with which the knowledge of its handling has been disseminated throughout the Southwest, I'm sure there isn't a doctor in this county who would make a grave error in diagnosis should a case of meningitis develop here.

Even if he have not taken the pains to visit those centers of infection in order to study at first hand the disease where it can be observed in all its forms, he should be able from a perusal of the current health bulletins issued by our State Health Board to make a prompt provisional diagnosis. He will at least regard with suspicion every severe headache accompanied by stiffness of the neck muscles. Perhaps preceding this he may have noticed a state of extreme irritability and general hyperesthesia. Later still there may develop slight clouding of the perceptive faculties and impairment of memory for recent events. These initial symptoms which ordinarily would indicate only a severe autointoxication, the physician now watches with concern.

I refer to these early signs only because the later more pronounced ones, the classic opisthotonos and the petechial rash come too late for benefit from any form of treatment.

It is the early recognition of this infection that constitutes the basis of the low mortality estimate claimed as possible with the use of anti-meningococcus serum.

Until our hopes had been fed upon the solid food of specific certainty in the management of this most dreaded of all diseases we had not given serious study to its early diagnosis. We now see the importance of its prompt clinical recognition in order that effective specific treatment may be given. For our present purpose we shall consider those cases only which exhibit certain prodromal symptoms, because we all know that the fulminant infections are practically all fatal, no matter how soon after the onset we begin treatment.

When occasion arises for the use of a serum in the treatment of disease its employment is often regarded as but a routine measure. This is

not as it should be. The fact is that more exact knowledge of each individual patient and his probable idiosyncrasies is required for this method than is demanded in any other form of treatment. It is also absolutely essential to success that the subsequent effect of the remedy be carefully watched. The means by which these observations are made and important data are obtained will be referred to later in this paper. We presume that the nature and the methods of preparation of the various sera are familiar to all of you, but physicians busy in general practice necessarily are denied the opportunity for the special study of specific methods involving unusual technical knowledge.

A practical acquaintance with these methods, however, is not difficult to obtain even in our general practice. It is very important to distinguish between a vaccine and a serum and their relative uses in therapeutics. An antitoxic serum contains those elements which antagonize or neutralize the toxins already set free in the body. The serum itself contains no toxin and is as safe for the patient as is normal serum and in whatever quantity it may be given. It is capable theoretically of producing passive immunity by furnishing ready made those antibodies, or antitoxins so necessary to the protection of the organism against a given infection.

A vaccine contains the actual toxins of the disease for which it is intended as a remedy. The only purpose in the administration of a vaccine is that of stimulating the formation of antibodies and bactericidal elements in the organism as a defense against those poisons then free in the body of the patient. The introduction of the vaccine is merely adding to the toxic products already accumulated in the blood of the patient at the time ill with an infection. These vaccines contain, in some instances, substances which have bactericidal powers and when administered destroy bacteria in the blood stream, thus setting free additional toxins, tending still further to depress the patient. This bacteriolytic action on the part of the remedy is undesirable where the patient is already overwhelmed with virulent toxins and can take care of no more.

No such disastrous results attend the introduction into the body of the antitoxic sera—at least, whatever disastrous results there may be, come from an entirely different source.

Since in the infection of meningitis we use an antitoxic serum we feel impelled to refer briefly to the possible dangers attending its indiscriminate use. To administer these potent agents in the treatment of the various infections for which they are prepared, and to be governed in their use simply by the label and the directions printed on the wrapper is, to say the least, treating the disease by little less than a hand-me-down method.

We will first consider the problem of prophylaxis. This has for a number of years been considered an important one in serotherapy, and not

until within the last two years has the safety of passive immunization through the use of antitoxic serum been seriously questioned. While the dangers are not great, yet when we contemplate the possibility of a sudden death from a prophylactic dose of antitoxin we naturally stop to think, and while one unfortunate doctor is thinking, thousands of laymen are busy at something more than thinking.

It has been demonstrated that any foreign protein, especially that contained in pure horse serum, when injected into the blood stream produces a condition of hypersensitiveness to a subsequent injection of the same sterile serum, provided the second dose be delayed seven to fifteen days. (a) This hypersensitiveness expresses itself (if the second dose be a large one, or if it should happen to enter directly the blood stream) in extreme and alarming depression of the respiration. This is accompanied by edema of the respiratory passages. The patient suddenly takes on the characteristic facies of the violently asthmatic. (The writer has had one ugly experience with a patient into whose urethra he had instilled a dilute solution of adrenaline. The symptoms were not identical with those of serum poisoning, but it was a case of near-tragedy with two actors only, and at rehearsal.) Sometimes this is accompanied by the appearance of giant urticaria. The important point in the light of our present knowledge of antitoxic serum as a valuable and positive remedy in certain infections is this:

If a patient have been taken down with diphtheria or meningitis we feel fairly certain of our ability to save him by the timely use of the appropriate serum. But if we give to a normal individual a prophylactic injection of antitoxic serum he, so far as we know, is protected for not longer than three to six weeks from diphtheria, and possibly not at all from meningitis or any other disease.

Mind you now, we refer to the use of serum, not a vaccine. Not only has the period of immunity been a brief one resulting from this prophylactic dose of antitoxin, and therefore of little practical value, but in addition we have produced in our patient a sensitizing effect which, after seven to fifteen days, renders him anaphylactic or hypersensitive to a subsequent therapeutic dose. If repeated daily up to the fifth or sixth day no such phenomenon occurs, but if given later than the seventh day following the initial dose the respiratory symptoms to which we have referred may appear in varying degrees of severity.

This condition of anaphylaxis may continue for years. (b) So that if after a period of three to six weeks of apparent immunity conferred by an injection of antitoxic serum has passed, the subject should come down with meningitis, the necessity would arise for the use of antimeningitis serum. Not only would its use be imperative, but it would be injected into the spinal subdural space in order to get definite results.

If the patient has been previously sensitized he is almost sure to collapse from the therapeutic injection into his spinal canal. There have been four fatal cases of sero-anaphylaxis reported as a result of the follow-up dose with an interval varying from three, five, to forty days from the first injection. (c) The question of serum injections for possible immunity was seriously considered during the first days of the epidemic in Dallas, Texas. Dr. Sophian, so the writer was informed, took two injections himself, subcutaneously. At present the serum is not being used for prophylaxis on account of this anaphylactic effect. Dr. Sophian did not recommend its general use for this purpose. That indefatigable worker has since prepared a vaccine in which he has sufficient confidence to use upon himself for immunization.

Experiments upon guinea pigs with a view to the demonstration of this principle have shown an almost uniform fatal outcome following the repetition of the dose of normal horse serum at the end of fifteen days. (d) But these injections were made either intravenously or intraperitoneally and hence the risk was much greater than when used as it is in human beings, partly because the human body seems to show greater resistance, and further because the injection when made subcutaneously is taken up more slowly.

Aside from the phenomenon as observed after the fifteenth day interval between the first and second injection, the same remarkable symptoms are seen upon the injection for the first time of sterile horse serum, whether containing any form of antitoxic principle or not, into an individual who is subject to attacks of asthma.

The great central principle which through patient and painstaking research has been brought out by Richet, Rosenau and Anderson is that the advantage to be gained from a problematic and brief immunity derived from an injection of anti-toxic serum is far outweighed by the dangers encountered during the treatment of the infection should the individual become a victim.

The risk is far greater in meningitis, first because it has never been demonstrated that the serum will confer immunity at all.

Again, because of the necessity of introducing a therapeutic dose into the spinal subdural space, where the point of entry of the serum offers almost the same prompt means of absorption as if it were introduced directly into the blood stream.

The therapeutic results have been so satisfactory in both diphtheria and meningitis that we no longer fear these diseases as we once did. In view of the possibility of alarming and even fatal results following the therapeutic use of antitoxin in a patient who has had a previous immunizing injection, perhaps years before, we may with reason hesitate to use antitoxin for purposes of immunity. We may go further still in pursuit

of reasons for caution. In the hasty use of such unproved sera as the so improbable, whether they be given as prophylactics or for curative anti-pneumococcus and the anti-streptococcus, where beneficial results are effect, the patient's protective powers are seriously menaced. He may in the future become the victim of an infection for which there is a certain and effective antitoxin. The state of anaphylaxis in which the attempted prophylaxis has left him would certainly be embarrassing to him in the presence of an attack of meningitis. (e)

A most important precaution in the use of the serum when injected into the spinal canal is to note the blood pressure during the operation. As a rule the quantity of cerebro-spinal fluid present has no constant relation to the blood pressure, but the possible shock attending the puncture and subsequent manipulation of the canula frequently causes reduction of blood pressure. (f) For this reason a reliable sphygmomanometer should always be adjusted before beginning the operation of puncture and injection. Any of the recent literature affords abundant information concerning the technique, time for the repetition of the dose, quantity to be given, etc.

The reason for administering antimeningococcic serum by way of the spinal canal is that its action in this location is much more certain than if given subcutaneously, as in diphtheria.

It was first given under the skin, but it was left to Dr. Simon Flexner to conceive the idea of attacking the disease at its place of business, the spinal canal and the cranial cavity.

When it can be determined that the lateral ventricles, or any of the cerebral ventricular spaces are involved, it is recommended to trephine both sides of the skull and to inject the ventricles.

This complication is most apt to occur in the case of children. It is also found in the fulminant and in the delayed cases. Since the adoption of the technique of Flexner the death rate has fallen, counting all classes of cases, from eighty per cent to twenty per cent. In Dallas, leaving out the decidedly fulminant type in which help could not be summoned till the patient was moribund, and those which were seen after forty-eight hours, the death rate was ten per cent.

a—Pediatrics, Sept., '11.

b—Journal A. M. A., vol. LII, p. 1687.

c—Journal A. M. A., vol. LV, p. 538.

d—Journal A. M. A., vol. LVIII, p. 178.

e—Journal A. M. A., vol. LIV, p. 2099.

f—Journal A. M. A., vol. LIV, p. 1635.

THE TREATMENT OF MORPHINISM BY THE LAMBERT METHOD.

By Dr. G. Wilse Robinson, Superintendent Punton Sanitarium, Visiting
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The treatment of morphinism is a subject in which every man engaged in the practice of medicine is interested, not that all physicians desire to treat these cases, but they are all consulted by the unfortunate victims of this and other drugs as to where they can get the best and most effective treatment. Many of those who consult physicians concerning this matter are unable to leave their homes and go to an institution for treatment and then it becomes necessary for the family physician, whether he be practicing in the city, town, or rural districts, to give them relief. If the patient be one who can pay for institutional treatment and the physician who is first consulted is not desirous of handling the case himself, the question suggests itself to him, where can he send his patient where he or she will get the best and most effective treatment. If it be a patient who can not pay for institutional treatment then the question suggests itself to him how can he best treat his patient at home. When a physician sends a patient from his community and recommends some one to treat that patient, for him, his reputation is more or less at stake.

If the treatment is satisfactory, if the results are good, the physician is credited as being a man of good judgment, who knows where the best can be had. If, on the contrary, the treatment is not satisfactory and the results are bad, the family physician must share with the man whom he recommends, the credit for the result. If a physician recommends some institution or some man to a morphine addict he desires to send his patient to that place where the morphine can be withdrawn with the least possible harm, the smallest amount of suffering to the patient, and within the shortest period of time, and also he desires to know from what institution his patient will be sent home in the best possible condition, and oftentimes at the smallest expense to the patient. If he desires, or it becomes necessary to treat his patient within his own home he desires to have knowledge and command of that treatment which he can administer easily and that will give him the best results. Much has been written by many men advocating various forms of treatment and it has been the policy of most men while advocating some particular form of treatment which they use, to condemn all other methods as bad.

The man who advocates the gradual withdrawal method and spends weeks, perhaps months, in getting his patient to discontinue entirely the use of morphine, is loud and emphatic in his assertions that his is the only

method which will relieve and cure and not harm the patient. The man who locks up his patient and removes the morphine immediately makes the same claims concerning his method, likewise the man who paralyzes his patient for a period of days with Hyoscine, and the man who gradually reduces the amount of morphine which the patient is using for several days and then withdraws it suddenly, make the same statements concerning their treatment. All the various forms of treatment mentioned above unquestionably have some merit. I have used all of them and it has been my experience that the gradual withdrawal method is the worst possible form of treatment that can be used, and I have abandoned this method excepting in those cases in which it is impossible to use any other. With the gradual withdrawal method it takes several weeks to get the average patient off the morphine and unless you use, constantly, sedatives for the relief of the suffering, the patient suffers intensely and then it takes several other weeks in order to build up your patient, so that he is fit to return to his home. The longest methods of which this is the chief are the most expensive for the patient, and of course, the most lucrative for the man who is giving the treatment.

In September, 1909, Dr. Alexander Lambert of New York City, announced to the profession, through the Journal of the American Medical Association, that a layman, Mr. Towne, of that city, had told him of a treatment for all forms of drug addictions and alcoholism which relieved the patient quickly, effectively and without suffering or injury. After reading claims made by Dr. Lambert for this particular method of treatment I was inclined to doubt the correctness of the statements made. Dr. Lambert stated that he had used the treatment on a large number of patients who took various quantities of morphine, cocaine, etc., and that within three days they could be relieved of their craving for the drug without suffering or injurious after effects, and that they were conscious during the entire course of treatment, able to sleep, take nourishment and continue in a rational state of mind. I had charge of the treatment of these patients at the Kansas City General Hospital and decided that I would give the method a thorough test in treating the patients there. I did so and found to my satisfaction that Dr. Lambert had in nowise overstated the case. In treating charitable patients at a general hospital, for the morphine habit, it is a well known fact that you must have some form of treatment which will cure quickly and easily or your results are not satisfactory. In the first place your patient will not remain in the hospital for a long period of time; in the second place, from an economic standpoint, such patients should be relieved and discharged in the shortest period of time. I began using this treatment on a selected number of patients who were in good physical condition and were not taking large quantities of the drug and found the results were very satisfactory. It was not long until I was giving it to all of the drug addicts and alcoholics who entered the hospital for treatment. Within a short time I began using it in my private practice and have continued to use it in both my General Hospital practice and

with practically all of my private patients. I have used this treatment, as stated above, in my practice in the Kansas City General Hospital with all classes of patients, with private patients in General Hospitals, in their homes, and in the Punton Sanitarium. I have used it now with about two hundred patients suffering from morphinism and wish to state most emphatically that it will do everything that has been claimed for it. I know from my experience that this treatment will relieve patients of the craving for morphine within three days' time, without suffering or injury to the patient, the patient being able to sleep and remain conscious during the entire course of treatment. I have effected these results in patients who were using from one to sixty or more grains of morphine per day and had been using these quantities for from three months to twenty years and I have been able to follow up many of them and know that they have remained well, and when I say well, I mean that they no longer crave morphine and that they are in good physical and mental condition, able to go about their business the same as they did before they contracted the habit. I do not mean to say that all patients can take this treatment. With some the stomach rebels, with a few the belladonna acts badly, and with a small percentage even after they take the treatment the craving for morphine remains but in an attenuated form. With all of the patients I have treated I have never seen a patient die under treatment, nor have I seen any bad after effects resulting from the treatment. I shall briefly report one case which is illustrative of about ninety per cent of those upon whom I have used the treatment. A neurotic woman, thirty years of age, who had been using morphine for six years, had been treated for several months by the gradual withdrawal method in an institution without benefit, entered the hospital for treatment. At the time she entered she was using twelve grains of morphine, after entering the hospital she received but three grains in all. I immediately placed her on treatment, she slept a considerable portion of the time while taking the treatment, awakening for her medicine and nourishment. After finishing the treatment she had no desire whatever for morphine, began eating and sleeping well, and increased in flesh and left the hospital for her home within ten days after entering, returning to her home she assumed her household duties, which she had been unable previously to perform and remained well, her relatives stating that she was in better mental and physical health than for years. I have heard many criticisms of the Lambert treatment, but I have never yet heard any man criticise it who has used it and tried it thoroughly. It is an easy matter to criticise, it is an easy matter to find fault with the treatment of which you know nothing. Theoretical criticisms are of little practical value. Much has been said in a theoretical way about the various ways in which the Lambert treatment could injure patients but these theories do not materialize when the treatment is used. Some of the advantages of this treatment that I have found in actual practice are first, the ease with which you may withdraw the morphine from the patient, second, the short time it is necessary for such patients to remain under treatment, third, the very

good condition of the patient after the treatment is finished. As stated above, it requires about three days to complete the treatment and withdrawal of the morphine, then it gives the physician an opportunity to build up his patient and removes in so far as possible the constitutional effects of the use of the drug. I advise my patient to remain under treatment for from two to four weeks after they have discontinued the use of the drug, in order that they may be reconstructed physically and mentally. I believe any treatment that is effective and of short duration will appeal to a business or professional man, or woman, as they do not feel that they can remain from their business a long period of time. I think many of them are deterred from taking treatment because they are told that it will take a matter of several weeks or months before they can return to their business.

VESTIBULAR NYSTAGMUS.

Dr. Edward F. Davis, Oklahoma City, Okla.

As this form of nystagmus is dependent on conditions in the vestibule and the semi-circular canals, it might be well to review briefly, the anatomy and physiology of these structures before entering into the discussion of the phenomenon.

The vestibule is an irregularly elliptical cavity lying above the jugular fossa, behind and above the cochlea and in front of and below the semi-circular canals. The outer wall forms the medial wall of the middle ear and is perforated by the oval window while the inner wall is for the most part smooth and separates this cavity from the fundus of the internal auditory canal. This wall is divided by an almost vertical ridge, the vestibular crest. Below and in front of the crest is a small depression, the spherical recess for the reception of the saccule and behind and above is the elliptical recess which contains the utricle. Perforated spaces are present on the crest and in the floor of each of the recesses for the passage of filaments of the vestibular nerves. These spaces are known as the maculae cribrosae superioris, medialis and inferioris according to their locations in the utricle, vestibular crest and saccule. The macula cribrosa superioris in the floor of the utricle is for nerves to the utricle proper and the ampullae of the superior and horizontal semi-circular canals; the macula cribrosa media is for those to the saccule and the inferior macula supplies the ampulla of the posterior canal.

The utricular wall is perforated also by the openings of the semi-circular canals, three ampullary and two simple. The least confusing naming of the canals is that indicating the direction of their convexities and in this way, they are known as the superior, horizontal and posterior canals.

The horizontal canal is the only one that has two openings into the utricle as the smaller ends of the posterior and superior unite and enter by a common passage. The canals lie above and behind the vestibule and extend in such a direction that the plane of each is at right angles to those of the other two. The bony canals are slightly compressed laterally giving the cross section an oval shape. At the ampullary ends are dilatations to receive the ampullae of the membranous canals.

The membranous lining of the utricle consists, first, of a connective tissue layer next to the bone, then a homogenous hyaline membrane on top of which is the epithelial layer of squamous cells becoming cylin-

dricul over the region of the macula cribrosa. At this space, nerve filaments enter the membranous utricule and the cylindrical cells become a neuro-epithelium, a combination of fibre cells and acoustic cells. The acoustic cells are oval in shape with a nucleus in the wide part and at the free end is a hairlike projection called the auditory cilia. These cilia float in a semi-liquid substance which surrounds the otoliths.

The membranous canals correspond in form in a general way to that of their bony capsules and are about one-third their diameter. The remainder of the lumen of the bony canals is occupied by a perilymphatic space in which are numerous connective tissue bands connecting the membranous canals to the periosteum and holding them in place. The ampullary ends of the membranous canals take up nearly all the space of the bony ampullae and are much larger in proportion to the tubal part of the canal than is the ampulla of the bony canal to its tubal portion. On the outer surface of the ampullae is the entrance of the ampullary nerves which is shown on the inner surface by a small elevation, the crista ampullaris. In addition to the epithelium continuous with that of the utricule, a neuro-epithelium is found on the crista corresponding with that of the macula acoustica of the utricule and having the same hair cells. This is called the macula ampullaris. It is seen therefore that the utricule and the semi-circular canals form a closed chamber in which an endolymph is free to circulate.

The function of the vestibular apparatus, that is, of the hair cells and otoliths is to give cognizance of the position of the head and therefore of the body in space. The otoliths being suspended in their medium, tend to fall as the utricule is inclined and by their pressure on the cilia impart an impulse to the nerve filaments which is transposed into a knowledge of the position of the head.

The three semi-circular canals, being at right angles each to the other two, embody all directions in space by their planes or by the various combinations of these planes. The function of the canals is to control the equilibrium of the whole body as well as that of the head and eyes. This action in each canal is brought about through the inertia of the endolymph acting on the cilia of the macula of the ampullae. It is in this way that when one is running, he unconsciously inclines the body in making a sudden turn to overcome the action of the centrifugal force. The act is not altogether one of habit or of a knowledge of the result in case it is not done as is shown by the fact if one is standing in a moving train, the body is inclined as it rounds a curve or if he is standing on a revolving platform, the inclination of the body is in relation to the velocity even though the eyes are closed and it is impossible to determine the speed through the visual sense.

Fifty years ago, Meniere described some cases in which vertigo was produced by lesions in the semi-circular canals but, aside from calling at

tention to the accompanying deafness, he went no further in determining the pathology of the condition or in working out a train of positive symptoms.

The fountainhead of the present practical understanding of the physiology and the pathology of the semi-circular canals is Robert Barany of the ear clinic of the University of Vienna. While nearly every aurist in Europe has written extensively on the subject, they have added little to the conclusions that his investigations have led him to make but have taken advantage of his less skillful pen and, in some cases at least, have been given undeserved credit for originality.

Vestibular nystagmus may be produced by certain tests applied to normal ears or it may be spontaneous. The former is physiological and the latter pathological. In the upright position of the head, the direction of the movement is horizontal or a rotary horizontal. An upward nystagmus is surely central in origin, occurring in cerebellar disease, multiple sclerosis, etc.

Nystagmus of vestibular origin is differentiated from that of the ocular type by the fact that in the latter form, the two components of the movement are equal in velocity while in the former, one is quick and the other slow. The slow movement is the reaction from the stimulation of the canals and the quick is the act of recovery, coming from the brain. In anaesthesia, the reaction or stimulation is produced as it is normally but the recovery is slow and for this reason it has been erroneously supposed that anaesthesia reverses physiological nystagmus. The direction of nystagmus is considered that of the quick component.

The tests most easily applied in determining the sensitiveness of the semi-circular canals are the turning test and the caloric. In making the turning test, the patient is seated upright in a revolving chair and this is turned around rapidly ten times and stopped suddenly. On examination of the eyes after this, a nystagmus will be found to have developed in a direction opposite to that of the turning. If the head has been held erect, the nystagmus will be horizontal but if it has been inclined so that the chin rests on the chest, it will have a rotary complement. The rotary motion is easily observed by watching the conjunctival vessels at the limbus. In making this test, the patient is to have his eyes closed or have on dark or strong convex lenses to prevent fixation. The average duration of the turning nystagmus is forty-two seconds. If it continues after twenty-five, the labyrinth may be considered to be acting normally. The patient should always be turned to the side opposite to that of the ear under observation to bring out the full amount of nystagmus. Therefore turning nystagmus is to the side of the ear examined.

The caloric test is made by syringing the ear with a continuous stream. It is perhaps more reliable than the turning test because in the latter, the

labyrinths of both ears are affected and some confusion might arise in differentiating the side in which the phenomenon is originated.

In this test, syringing with warm water gives a nystagmus to the same side and with cold water, it is to the opposite side. The stream should be directed against the drum for a minute and a nystagmus of about half this duration will follow. The higher or lower from the normal temperature one goes, the more pronounced will be the nystagmus though water hotter than 120 or colder than 50 should not be used.

In cases where the drum has been destroyed through disease or the radical mastoid operation and the vestibular wall is exposed, so that the water can come in direct contact with this wall, wide variations from the normal temperature are not necessary nor are great quantities of water required to elicit a response. In these cases, a few drops of water over two degrees warmer or colder than normal will give a definite result. The reverse of this is true in those cases in which the middle ear contains fluid or granulation tissue.

Electrical stimuli bring out a positive reaction in normal ears. The cathode is put against the drum or the vestibular wall of the ear to be examined and the anode is in the other ear. Nystagmus develops to the side of the anode. Two milliamperes is usually a sufficiently strong current. Where eight or more are required, there is a diminished sensitiveness and some pathological condition is present.

The fistula symptom is almost as important as the turning and the caloric tests. Where there is a fistula of a semi-circular canal, compression or rarefaction of the air in the external auditory canal will produce a nystagmus toward the ear examined with compression and to the opposite side with suction. Pressure sometimes sets up a very severe vertigo but this may be relieved at once by suction.

In turning test, the phenomenon of nystagmus depends on the inertia of the endolymph in the semi-circular canals. This inertia is only 1-45 of a second in duration but that is enough to stretch the hairs on the cupula of the ampulla. The impulse thus originated is transmitted through the vestibular nerves to their nucleus and from there, through Deiter's nucleus to that of the nerves of the eye muscles. The commencement of the turning will bring into action the principle of inertia and this elicits a nystagmus in the direction of the revolutions, known as primary nystagmus. With the ordinary method of making the test, however, it is impossible to observe this and the nystagmus seen on stopping the turning is due to the short continuation of the flow of the endolymph in the stationary canal and is the secondary nystagmus.

The result of the caloric test is produced in much the same way. It is due to a bending of the hairs on the cupula but instead of this being a manifestation of inertia, it is due to the current that is set up in the

endolymph by the change in temperature. The labyrinth is a closed vessel having within it a fluid of the temperature of the body. If on one side of this vessel, heat is applied, an upward flow of the contained fluid will be the result and one in a downward direction if cold is used. In this way the hairs are bent with the current and the remainder of the process of the production of nystagmus is the same as with the turning test. These tests work out the same in the lower animals and a certain proof of the theory is the fact that if the person examined is standing on his head, the opposite effect follows.

Flourens has formulated a law to the effect that each semicircular canal controls a nystagmus in its own plane and that if two of the canals are stimulated, the resulting nystagmus will be in such a direction as to embody the combination of the two planes. If the head is held erect when the turning test is applied, the horizontal canal will act and the nystagmus will be horizontal; if inclined to the shoulder, there is a vertical nystagmus owing to the irritation of the posterior canal and if the head is inclined ninety degrees forward or backward, there is a rotary nystagmus due to stimulation of the superior canal.

The general equilibrium is affected in a definite relation to the nystagmus produced. Thus, if there is a right horizontal nystagmus, there will be a tendency to fall to the opposite side. This is called the reaction movement. In the dizziness, objects seem to move in the direction of the nystagmus. If the eyes are closed, there will be the same falling to the opposite side but the sensation will be one of falling to the other side or that one indicated by the direction of the nystagmus.

These phenomena are the same whether the nystagmus is physiologically produced or is spontaneous and the result of labyrinthine disease. In disease of the cerebellum, however, the general equilibrium and the falling symptoms are independent of the direction of the nystagmus and the influence of the position of the head on the direction of the nystagmus is absent.

Vestibular disease is either acute or latent and may be either partial or diffuse. In the partial form, there is only a fistula of a semicircular canal while in the diffuse, there is a general destruction.

In suppurative processes of the labyrinth, the cochlea is the first structure destroyed and there is a complete loss of hearing as the first symptom. Bone conduction is entirely absent. In acute disease, there is a strong spontaneous nystagmus to the sound side and the caloric reaction is either absent or modified. There is severe vertigo, nausea and vomiting all of which are increased on sudden movement. The nystagmus is increased on directing the eyes toward the side of the quick component as are the other symptoms and the patient finds more comfort in lying down

and keeping the eyes closed or directed toward the slow component or the diseased side. For this reason, he prefers to lie on the diseased side and this fact is considered one of the diagnostic points in acute vestibular disease. During this stage, it will be found that the caloric test applied to the sound side will vary the nystagmus. If heat is used, it will be increased while if the ear is syringed with cold water, it will be either diminished or absent altogether. The fistula test is negative. These symptoms become lessened in a few days and the nystagmus usually subsides entirely in two weeks though it may become apparent by sudden movement or turning the eyes strongly to the side of the quick component.

As the condition becomes latent, the caloric reaction in the diseased side becomes negative and it is in these cases that the principles of vestibular nystagmus become of value in diagnosis. In the turning test, if the patient is turned to the diseased side which means an examination of the vestibular apparatus of the sound side, the after-nystagmus will be of about forty seconds duration; if he is turned toward the sound side, it will be reduced to fifteen seconds or less. The fact that there is some reaction in this last test and that the caloric reaction is negative is not a contradiction for the short nystagmus that is produced comes from the sound side.

Partial disease when not traumatic is due to cholesteatoma in eighty per cent of the cases and it is usually the horizontal semi-circular canal that is involved. The condition begins with an infiltration of the membranous canal which remains intact for a time but yields later and there is true fistula formation. There is spontaneous nystagmus toward the healthy side chiefly but it changes in direction frequently and consequently, the patient is very dizzy. In a continuous nystagmus, there is little vertigo the fistula symptom is positive and the caloric reaction is nearly normal so long as the destruction is only partial but as the disease progresses, these become uncertain and finally become negative.

In this paper, I make no claim for original work. It is the result of observation in the methods and points gained from the teaching of Barany, Alexander, Frey, Neumann and Liedler of Vienna.

UNPROFESSIONAL CONDUCT—LICENSE REVOKED—PRECEDENTS TO BE ESTABLISHED.

T. A. Blaylock, County Supt. Pub. Health, Marshall County.

The trial and conviction of Dr. R. W. Freeman, of Chickasha, and O. O. Gobin, formerly of Lawton, in the County Court of Marshall County, Oklahoma, during the past year, charged in two cases with practicing medicine without a license, with a penalty assessed against them, after a jury trial, of sixty days in jail and \$250.00 in each case, and their appeal to the Supreme Court, and the proceedings before the State Board of Medical Examiners, charging Dr. Freeman with unprofessional conduct, proposing to cure incurable diseases, having a capper or steerer, advertising in an unprofessional way (advertising that he could cure certain chronic diseases and all other chronic diseases; that he had with him "one of the greatest experts, or specialists, in the world," and a "specialist of a national reputation," and that he had one of the best X-ray machines in the world), and had with him as his assistant one who held no license authorizing him to practice medicine in Oklahoma, which fact was known to Dr. Freeman, and who, before his employment as such assistant, was convicted in Comanche County of violating the prohibition law and was worked on the county roads, upon which charge, after a hearing, the Board revoked the license of Dr. Freeman and from said action of the Board an appeal for a new trial has been taken to the District Court of Bryan County, is watched with much interest as a precedent as to the mode of procedure, how the charges should be made and whether the defendant on an appeal from the Board is entitled to a trial *de novo*, or a trial anew, or only a rehearing on the record made before the Board, will be established. Although Dr. Freeman had a license, as the proof showed that he signed prescriptions in blank to be filled out by his assistant, O. O. Gobin, and permitted and authorized the said Gobin to diagnose cases, knowing that Gobin had no license to practice medicine in Oklahoma, both under the charge of the court and the proof, were guilty of practicing medicine without license, and were convicted as heretofore stated.

Senator William M. Franklin, who wrote most of the health and practice acts, who has always manifested an interest in raising the standard of the profession and protecting the same and the public from impositions of medical "quacks," and other local attorneys, represented the prosecution in the criminal actions, instituted at the instance of the Marshall County Medical Association, and Senator Franklin and Assistant Attorney General Reeves represented the Association before the Board and will represent the complainants on the appeal in the District Court, or other Court to which the defendant may appeal. To the credit of Senator

Franklin, it should be said that he tendered his services to the medical fraternity in these cases gratis and he thinks that he will have abundance of proof to sustain the charges of unprofessional conduct. In this connection, it might be stated that Dr. Freeman's license was revoked by the Territorial Board of Examiners of Oklahoma after a hearing, prior to statehood, and after statehood he secured the license that was recently revoked.

Since the District Court has granted the defendant a trial *de novo*, a trial anew, proof will have to be offered as in the first instance before the Board.

This being the first appeal of this kind taken since statehood, as the defendant is stubbornly contesting the action of the Board, the outcome will be watched with interest.

REPORT OF A CASE OF PRIMARY METASTATIC CARCINOMA OF THE OMENTUM FOLLOWING THAT OF THE BREAST.

By Charles Nelson Ballard, M. D., Lately Associate Professor of Gynecology and Clinical Gynecology at College of Physicians and Surgeons (Medical Department of the University of Illinois); Surgeon to Marion Sims' Sanitarium, Chicago; Attending Surgeon at West Side Hospital, Chicago; Attendant in Gynecology at the West Side Free Dispensary; Attending Gynecologist at Wesley Hospital, Oklahoma City, Okla.

There are some singular things that occur in the process of metastasis. At first thought we wonder why the cells, floating along the blood stream or lymph channel, would not be arrested at once and precipitate a tumor formation at this first point of contact.

Were this true only adjacent tissue would be the seat of infection, or metastatic tumor growth. We know that this is not the case for this process takes place in organs very remote from the seat of the original tumor.

This is possible, because all tissue is not the same, neither are all wandering cells in the same stage of development. As these cells are being carried along the vessel, they may become deposited at any point. Their mere presence produces such a reaction of the cells lining the vessel that they may be completely destroyed. If they are carried to a region whose vitality is lowered by previous inflammation or injury, there the resistance is not so great and a tumor may be formed foreign to the cells of the invaded tissue.

Were it true, even in malignant growths, that all cells distributed by the blood stream, were able to produce new growths there would be no part of the body that would escape. As it is, there are only a few cells that are able to establish themselves against the reaction of the cells at the points of attempted localization. This is why we usually find these growths where tissue vitality has been lowered by disease or injury.

These wandering cells are to be deposited among cells foreign to their original habitat. So to establish metastases they must have all their power of resistance.

It seems to be a rule of the organism, that cells out of place, meet antagonism from normal cells and are usually destroyed. In the case to be reported, I had removed the left breast, for a malignant growth, about one year previous.

The wound healed by first intention and at this time there is no indication of return.

After a few weeks of suffering in the lower abdomen she discovered a hardness above the pubes and consulted her physician, who sent her to me with a diagnosis of fibroid tumor.

My findings are:

Mrs. B., age 50 years, housewife; German-American. Her father and mother are dead, cause not known. One brother is living and in good health, no sisters. She has been married twice, living with her first husband 12 years; was a widow 5 years and has lived with her second husband 12 years.

She was 12 years old when she began to menstruate; the flow has always been regular; the amount and duration normal, with no pain. She has had 5 children, three of which are living and well, one died at the age of 27 with pneumonia, and one at 21 of heart trouble. One year after the birth of the first child she had a miscarriage at three months. About three years ago she noticed some pain in her left ovarian region. These attacks were repeated quite frequently until her suffering became almost continuous in the left lower abdomen.

Further examination made it plain that the left iliac region was filled with a hard mass which encroached upon the right side some distance. Digital examination showed that the cul de sac of Douglas and the pelvic cavity to the left, was occupied by an almost immovable mass. From the history of the case I considered it inflammatory in character. No fluctuation could be determined. The greatest thickening could be felt above Poupart's ligament, and to the left along this line, encroaching to some extent, to the right of the median line, in the same anatomical position. After completing the examination I felt suspicious that malignancy might exist owing to that condition having existed in the breast removed. The history of the pelvic trouble was not that of malignancy. No coehexia existed.

On opening the abdomen quite a little flocculent fluid was found. This away, the omentum presented, it was very thick and closely adherent to the lower abdominal wall. It could not be restricted to one side to gain entrance to the pelvis in the usual way. Only by enlarging the incision upward and pushing it to one side higher up and to the left was I able to get my fingers into the pelvis.

In this way I was enabled to determine the extent of the adhesions of the omentum and its relation to the pelvic organs. It was adherent to the abdominal wall above Poupart's ligament, extending to the left to near the region of the anterior spine of the ilium, and on the right to about one-half this height. The superior border of thickening then, was obliquely from above downward and to the right. It was irregular, ragged, and

deeply congested. It was closely attached to the superior surface of the bladder and uterus, with varied points of adhesion to the intestines. The fluid present showed its power of lymph production with diminished ability to absorb.

The first thought was, on opening the abdomen and viewing the omentum, that I had a case of inoperable carcinoma. A more careful examination of its extreme lower adherent border developed a line of cleavage that would admit of separation from the organs to which it was attached. After some time this separation was accomplished, leaving an uncommonly smooth yet oozing surface. This done, I tied it off in sections, wide of the induration, and removed the diseased portion.

The recovery was uneventful. She left the hospital within ten days and was not heard of until six months later when the family physician reported that there was fluid in the abdominal cavity and that the patient was failing gradually.

At this time a transverse linear mass could be outlined just below the transverse colon. This mass was most likely the indurated stump of the omentum, yet it would be characteristic of the omentum to roll upon itself in an effort to wall off the ligatures used, thus preventing a similar mass.

The first macroscopical appearance was that of malignancy, but the line of cleavage found, and the ability to separate the tissues demonstrated, was not the characteristic of malignant growths. Clinically it did not act malignant, but the history of the patient, having had carcinoma of the breast one year previous, and this followed by the microscope, demonstrating malignant cells, forced me to believe in its malignancy.

Different stages of progress were shown in the small hard nodules and necrotic areas found. A careful search was made for malignancy in adjacent tissue. Glands were removed and examined but no malignancy was demonstrated elsewhere.

Metastatic carcinoma of the omentum is common when the primary disease exists in an organ in close relation to it, but as a sequela of carcinoma of the breast, it seems to be very rare indeed. So far I have been unable to find such an occurrence in the literature at my command.

We are taught by the pathologist that bacteria may be deposited anywhere in the body and not cause a disturbance of the cells unless the receiving tissue has been rendered inactive by disease or injury.

The pathology found in the pelvis was plainly inflammatory in character. It is my belief that the adhesions of the lower omentum was due to an inflammatory process, pure and simple, and that the metastatic invasion

was of a more recent date. Our knowledge of pathology would lead us to believe that the already diseased tissue was more susceptible to metastatic invasion than it would have been were its power of resistance normal. In this way we are able to account for this remote tissue being the seat of invasion, while the intermediary tissue escaped.

EDITORIAL

A GOOD EXAMPLE TO FOLLOW.

Recently there appeared in the daily papers of Muskogee the following notice and its contents are so applicable to ourselves in the medical profession that we reproduce it for what good it may do.

"We the undersigned members of the dental profession of Muskogee will be absent from our offices all of next week, March 25 to 30th to attend the meeting of the Oklahoma State Dental Association at Oklahoma City. J. T. Roberts, A. E. Bonnell, A. E. Pfeiffer, George Shimoon, A. F. Griswold."

These are all busy men and their work keeps them closely confined at home and the fact that they deliberately close up shop for the purpose of attending a dental meeting indicates that they know the value of such meetings.

We have so much of the man who is detained at home at the time of the annual meeting by some trivial ease, often detained not by the ease but by the hope of getting them, that they are becoming tiresome; we also have the man who year after year climbs into the program column yet never delivers himself of the promised paper. Society attendance should be one of the sacred duties and also a pleasure of every member; it is true there are times when it seems impossible to make the necessary arrangements to attend, but usually the greater number of members can arrange some way to be present a part of the time at least.

Meeting your co-workers in the profession and exchanging ideas is stimulating to better work and increased endeavor and you can all make this year an exception if you are not in the habit of attending and be with us; you will be the gainer by doing so.

FOLLOWING THE FLAG AND THE CONSTITUTION.

A few years ago we had a popular slogan on the lips of our public speakers; they loved to say that the Constitution followed the Flag in their allusions to what we proposed to do in the Philippines.

It is of interest to medical men to note that other blessings follow the flag recently introduced to these primitive peoples. It is true that in the centers of population schools and hospitals are established under American control, but a recent issue of the Manila Medical Society Bul-

letin indicates that the diseases of civilization, hitherto unknown to them, at least in a severe form, have followed the influx of the white man and have wrought almost unbelievable havoc.

A small jurisdiction of islands, which ten years ago had an estimated population of twelve thousand people, is today limited to one-half that number and the medical officers state that this is due solely to the ravages of tuberculosis, smallpox and venereal diseases in addition to great waves of bacillary dysentery, which lately seems to have become more virulent than before.

Smallpox was remarkably fatal, when we consider its present mildness in this country; it caused the death of thousands of people, as vaccination was practically unknown or not practiced.

Influenza caused an estimated loss of from ten to twenty per cent of the people—this brings to mind the exceeding severity of influenza on its appearance in the United States when in 1891 it swept over the country killing thousands of people—seemingly more severe on account of having a new host.

A FINE LINE OF STERILIZED SOLUTIONS.

Hermetically sealed glass ampoules containing sterilized solutions of important drugs for hypodermic use have assumed a commanding place in medicine in a comparatively short period of time. Two or three years ago, seeing the tendency in this direction, Parke, Davis & Co. brought out a modest line of something like a half dozen formulas, notable among them being solutions of Adrenalin, Codrenin, and Caeodylate of Sodium. From this small beginning the line has expanded until now the company announces a total of about twenty distinct formulas. The full list, we understand, is now appearing in display advertisements in the leading medical journals of the country. Physicians who are interested in this advance in hypodermic medication—and every physician ought to be—will do well to search out these advertisements and familiarize themselves with the comprehensive line of solutions therein offered.

Solutions provided by the glaseptic ampoule, it is obvious, have several advantages over those prepared in the ordinary manner. They are ready for immediate use; there is no necessity to wait until water can be sterilized and cooled. Accuracy of dose is ensured, each ampoule containing a definite quantity of medicament. The solutions are aseptic; they are permanent.

**PROGRAM OF THE TWENTIETH ANNUAL MEETING OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION,
SHAWNEE, MAY 7-8-9, 1912.**

MEETING PLACES—Section on Gynecology and Obstetrics, Chrisney Block, Main and Beard.

Sections on General Medicine and Mental and Nervous Diseases, merged, Chrisney Block, Main and Beard.

Section on Surgery,

Section on Pediatrics,

Section on Diseases Eye, Ear, Nose and Throat, Eagle Club Rooms.

GENERAL INFORMATION.

Under the Constitution and By-Laws members in good standing, that is, those who have paid their dues for the year 1912, are the only ones entitled to the privileges of the floor, excepting visiting physicians from other states who may be allowed such privilege on proper motion before the section.

REGISTRATION,

A list of members in good standing will be in the office of the Secretary and from this list badges will be supplied when the member has registered. All members are required to register.

ERRORS IN MEMBERSHIP will be rectified when called to the attention of the Secretary.

INFORMATION BUREAU, Lion Drugstore, Whittaker Block, Main and Beard, will remain open all night.

SMOKER, Eagles' Hall, Wednesday, May 8th, 8:00 P. M.

LADIES' AUXILIARY will have headquarters in the Shawnee Physicians' Club Rooms and the wives, daughters and sweethearts of physicians will hold their meetings at that place.

PAPERS TO BE READ BEFORE SECTIONS should be prepared in such a way that they will be ready to be handed to the Section Chairman without delay as soon as rendered. If it is the desire of the author

to have reprints of the paper after it has appeared in the Journal this should be plainly indicated on the paper and the publisher will take the matter up properly when the article goes to press.

May 7th, 1912. 8:00 P. M.

Meeting of the House of Delegates, Chrisney Block.

Meeting of the Council.

Call to order by the President. Appointment of General Committees and the transaction of such business as may be necessary.

May 8th, 9:00 A. M.

General meeting, Chrisney Block.

Call to order, Honorable Frank P. Stearns, Mayor of Shawnee.

Invocation, Reverend J. H. Ball, Shawnee.

Address of Welcome, Honorable S. P. Freeling, Shawnee.

Response, Dr. R. M. Howard, Oklahoma City.

Address of the President, Dr. Chas. L. Reeder, Tulsa.

May 8th, 10.00 A. M.

SECTION ON GENERAL MEDICINE, J. A. Hatchett, Chairman, El Reno.

SECTION ON MENTAL AND NERVOUS DISEASES, A. D. Young, Chairman, Oklahoma City.

Address of the Chairman on General Medicine.

Address of the Chairman on Mental and Nervous Diseases.

"The Merging of the Section on Mental and Nervous Diseases With That of General Medicine."

1 The Sanitarium Treatment of Incipient Insanity, J. W. Duke, Guthrie.

2 "Pellagra," Chas. R. Hume, Anadarko.

3 "The Family Physician and the Insane Patient," D. M. Griffin, Norman.

4 "Venereal Infection with Reference to Crime and Mental and Nervous Disturbances," Curtis R. Day, Oklahoma City.

5 "Diseases of the Heart Muscles," L. J. Moorman, Oklahoma City.

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SYMPOSIUM ON INDIGESTION.

1 "Gastric Indigestion," Frederick Wilkiemeyer, Muskogee.

2 "Intestinal Indigestion," F. W. Ewing, Terrell.

3 "Enteroptosis as a Factor in Indigestion," H. P. Wilson, Wynnewood.

- 4 "The Effects of Gastric and Duodenal Ulcer on Digestion," A. L. Blesh, Oklahoma City.
 - 5 "Diseases of the Gall Bladder and Pancreas as Factors in Indigestion," LeRoy Long, McAlester.
 - 6 "The Effects of Chronic Appendicitis on Digestion," Millington Smith, Oklahoma City.
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- 7 "Suppurative Pleurisy," Chas. W. Heitzman, Muskogee.
 - 8 "Differential Diagnosis and Treatment of Influenza," Harry Breese, Henryetta.
 - 9 "The Physician as a Teacher of Sexual Hygiene," Arthur S. Risser, Blackwell.
 - 10 Subject unannounced, Fred G. Priestley, Bartlesville.
 - 11 "The Duty of the Family Physician when Tuberculosis Exists in His Practice and the Treatment of Last Stages," D. W. Wadsworth, Tulsa.
 - 12 "Constipation: Its Cause, Diagnosis and Treatment," F. L. Hughson, Vinita.
 - 13 "Psycho-Therapeutics," G. A. Boyle, Enid.
 - 14 "The Treatment of Fevers Without Demonstrable Physical Signs," C. J. Fishman, Oklahoma City.
 - 15 "Anesthetics," E. O. Barker, Guthrie.
 - 16 "Lobar Pneumonia," E. Forest Hayden, Tulsa.

SECTION OF PEDIATRICS.

May 8th, 10:00 A. M.

A. B. Montgomery, Chairman, Muskogee.
 Meeting Place, Eagle Club Rooms.
 Chairman's Address.

- 1 Lymphatic Diseases of Children, Winnie M. Sanger, Oklahoma City.
- 2 Sarcoma of Kidney in the Infant, Report of Case. T. H. McCarley, Atoka.
- 3 Scarlet Fever, W. A. Tolleson, Eufaula.
- 4 Intestinal Diseases of Children, Carl Puckett, Pryor.
- 5 Pyloro-Spasm, With Report of Case, W. M. Taylor, Oklahoma City.
- 6 Trachoma, Sessler Hoss, Muskogee.

- 7 Unusual Cerebral Phenomena in Child of Ten Years, W. G. Little, Okmulgee.
- 8 Cerebro-spinal Meningitis, H. M. Williams, Wellston.

SECTION ON GYNECOLOGY AND OBSTETRICS.

John F. Kuhn, Chairman, Oklahoma City.

Meeting place, Chrisney Block.

May 8th, 10:00 A. M.

Address of the Chairman.

- 1 The General Practician as an Obstetrician and Gynecologist, Dr. J. B. Smith, Durant.
- 2 An Unusual Train of Symptoms Caused by Uterine Fibroids, V. Berry, Okmulgee.
- 3 Death Following Delivery, With Case Report, L. S. Willour, Atoka.
Formal Discussion Based on the Foregoing Case, LeRoy Long, McAlester.
- 4 Hysteria and Its Relation to Uterine and Cervical Lacerations, D. M. Montgomery, Marlow.
- 5 Obstetrics in a Country Practice. Case Reports, M. A. Warhurst, Sylvian.
- 6 Gastro-Intestinal Disturbance Complicating Pregnancy, C. D. Blachly, Norman.
- 7 Two Hundred Obstetrical Cases, Deductions Therefrom and Remarks on Unusual Cases, Lester H. Murdoch, Okeene.
- 8 What is New in Obstetrics, W. M. Cott, Okmulgee.
- 9 Experiences in Early Day Obstetrics among the Indians, D. Long, Duncan.
- 10 Where is the Border Line, D. A. Myers, Lawton.
- 11 Management of Uterine Misplacements, R. J. Baze, Chickasha.
- 12 Where Angels Fear to Tread, S. H. Landrum, Altus.
- 13 Ectopic Pregnancy, S. N. Mayberry, Enid.
- 14 Obstetric Surgery, T. B. Coulter, Chickasha.
- 14 Obstetrical Surgery, F. H. Clark, El Reno.
 - (a) Emergency to Facilitate Delivery.
 - (b) Post-Partum Surgery.

- 1 Indications for Operative Interference.
 - (a) Eclampsia.
 - (b) Deformed or Contracted Pelvis.
 - 2 Methods.
 - (a) Old Method Incising Pubic Bone and Operating.
 - (b) Later Methods, Abdominal Caesarian Section.
 - (c) Vaginal Caesarian Section.
 - 3 Dangers.
 - 4 After Results.
 - 15 Uterine Reflexes, L. B. Torrance, Okmulgee.
 - 16 Eclampsia, Cause and Treatment, R. W. Williams, Anadarko.
 - 17 Preventive Gynecology, A. B. Leeds, Chickasha.
 - 18 Pelvic Infections, R. M. Howard, Oklahoma City.
 - 19 Management of Malpositions and Presentations, R. E. Looney, Oklahoma City.
 - 20 Puerperal Sepsis, G. A. Wall, Oklahoma City.
 - 21 Placenta Praevia, J. C. Amis, Fort Smith, Ark.
-

SECTION ON DISEASES OF THE EYE, EAR, NOSE AND THROAT.

May 9th, 10:00 A. M.

Dr. A. W. Roth, Chairman, Tulsa.

Meeting place, Eagles' Club Rooms.

- 1 Sympathetic Ophthalmia, E. S. Ferguson, Oklahoma City.
- 2 The Ear, G. H. Thrailkill, Chickasha.
- 3 Etiology and Treatment of Nasal Catarrh, W. B. Newton, Muskogee.
- 4 Laryngeal Nystagmus, Report of Case, Harry H. Wilson, Shawnee.
- 5 The Throat and Its Value to the General Practitioner, A. B. Leeds, Chickasha.
- 6 Eye Degenerates, L. Haynes Buxton, Oklahoma City.
- 7 Ocular Reflection, S. M. Jenkins, Enid.
- 8 Tarsal Resection for Trachoma, Milton K. Thompson, Muskogee.
- 9 Copiopia, C. J. Lukens, Enid.
- 10 Ocular Diseases and Symptoms Depending on Pathological Conditions in the Nose, C. M. Fullenwider, Muskogee.

SECTION ON SURGERY.

F. L. Carson, Chairman, Shawnee.

Meeting place Eagle Club Rooms.

May 9th, 10:00 A. M.

Address of the Chairman.

- 1 "Report of 100 Consecutive Laparotomies With One Death,"
 - a Personnel of Operating Room.
 - b Preparation and Handling of Patients.
 - c After Treatment.
 - d Analysis of Cases.
 - e Conclusions. T. M. Aderhold, El Reno.
- 2 "Ischemic Paralysis With Report of Case," Robert L. Hull, Oklahoma City.
- 4 "Surgical Treatment of Ectopic Gestation," J. A. Walker, Shawnee.
- 5 "The After Treatment in Poliomyelitis," J. D. Griffith, Kansas City, Mo.
- 6 "Septic Processes in the Abdominal Cavity, When Shall We Operate?" Horace Reed, Oklahoma City.
- 7 "Office Treatment of Hemorrhoids," L. F. Watson, Oklahoma City.
- 8 "Failures in Gall Bladder Surgery," J. Hutchings White, Muskogee.
- 9 "Stereopticon Radiographs of Lesions Diffieult to Diagnose," E. S. Lain, Oklahoma City.
10. "Fracture of the Skull; Notes on Fifteen Recent Cases," Ross Grosshart, Tulsa.

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